V 39 #1
(Feb 57)

NATIONAL FISHERMAN

FEBRUARY 1957

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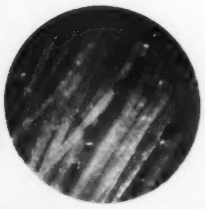
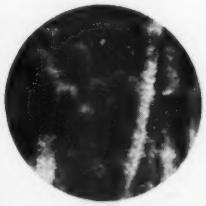
5% LOSS OF STRENGTH . . . VERSUS 100%

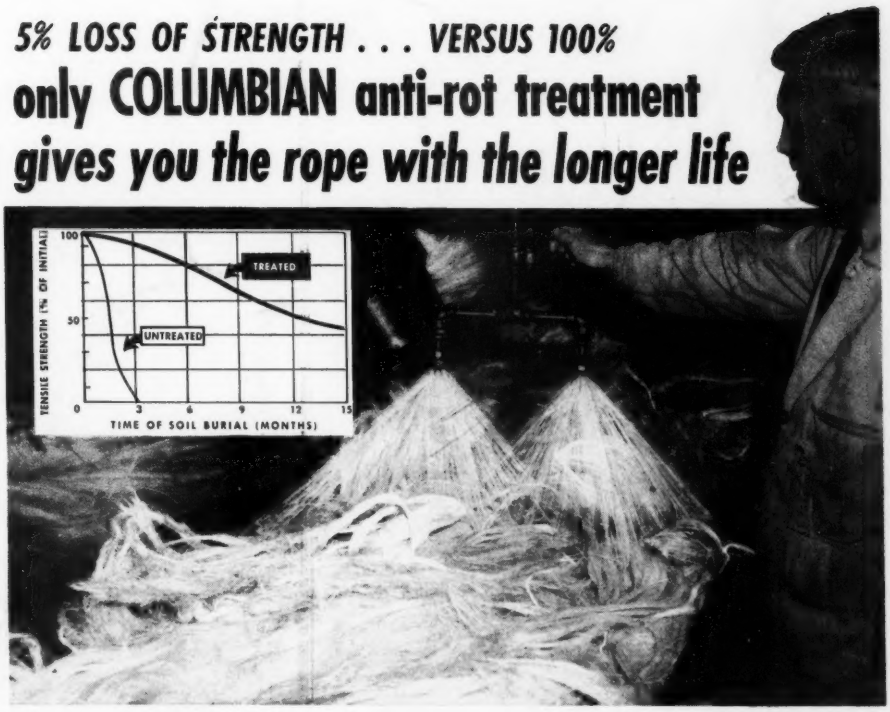
only COLUMBIAN anti-rot treatment gives you the rope with the longer life



Fungi-Static Columbian Rope, after two weeks incubation with green mold spores, only original spores are present.



Untreated Rope, also after two weeks incubation, shows heavy, additional growth of rope-rotting organisms.



Two samples of Columbian Manila Rope were buried together in warm moist soil. One sample was treated with Columbian Fungi-Static—the anti-rot material that stops the growth of fungi, mold, mildew and bacteria. The other sample was untreated. In three months time, the tensile strength of the untreated sample was completely gone. But the Fungi Static sample retained 95% of its original tensile strength. Even after 15 months burial, the Fungi-Static sample was nearly half as strong as it had originally been.

Fungi-Static, an exclusive product of Columbian laboratories, stops the growth of decay-causing organisms. It adds years of dependable service to every foot of Columbian Manila Rope.

And rot resistance is only one of the many advantages that this superior rope gives. Columbian Rope remains pliable while wet, has extra abrasion resistance, is treated with lubricating oils to resist internal heat and friction. Columbian has had more than 50 years of experience in manufacturing every type of rope from hawsers for ocean liners to twine for household use, and maintains its own fibre-grading plants in the best manila-fibre districts of the Philippine Islands.

A pioneer in the production of nylon, dacron and other synthetic-type ropes, Columbian "stabilizes" these ropes wtih a patented treatment that prevents unraveling when cut.

COLUMBIAN ROPE COMPANY,
AUBURN, *"The Cordage City,"* New York

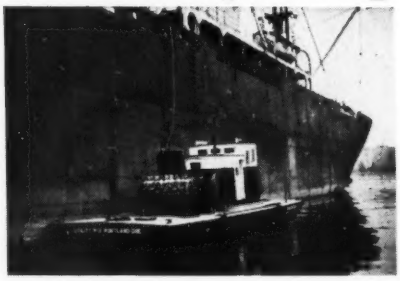
ENGINEER'S FIELD REPORT

PRODUCT CHEVRON PRESSURE PRIMER SYSTEM

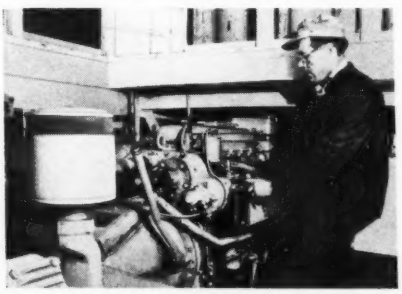
FIRM ALBINA ENGINE AND MACHINE WORKS Portland, Oregon

Safest, easiest way to start cold diesels quickly

Chevron Pressure Primer Discharger aboard "Utility No. 3", work boat of Albina Engine and Machine Works, is mounted right in the wheelhouse. Says Skipper Gilbert Edwards, "I have everything right at my fingertips...I can start the engine and get under way without ever going below. These steel capsules are a good deal! Just takes one to start the engine in any kind of weather...it always kicks over on the first or second turn. They are safer and easier to use than any other method I've ever seen for starting diesel engines quickly." Firm has used Chevron Pressure Primer System a little over a year, previously applied priming fluid through the breather pipe... before that commercial ether.

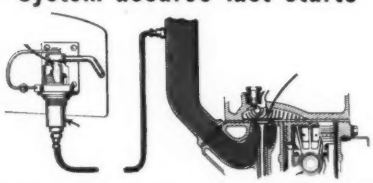


Utility No. 3 furnishes power and compressed air for welding and ship repairs. Chevron Pressure Primer starts diesels fast, even after boat has been idle a week or more.



Pressure Primer Discharger for auxiliary diesel is mounted on engine. Auxiliary runs air compressor and one welder. Firm's boats operate all year 'round in Portland–Columbia River area.

Why Chevron Pressure Primer System assures fast starts



- Volatile Chevron Priming Fuel atomizes in induction system at temperatures as low as –65°F.
- Pressure or weakest spark from engine fires mixture.
- Simple, rugged discharger prevents priming fuel leakage.
- Small, safe steel cartridges protect priming fuel from water and dirt.

For More Information or field help with any fuel or lubrication problem, write or call any of the companies listed below.

CHEVRON

TRADEMARK "CHEVRON" AND DESIGN REG. U.S. PAT. OFF.

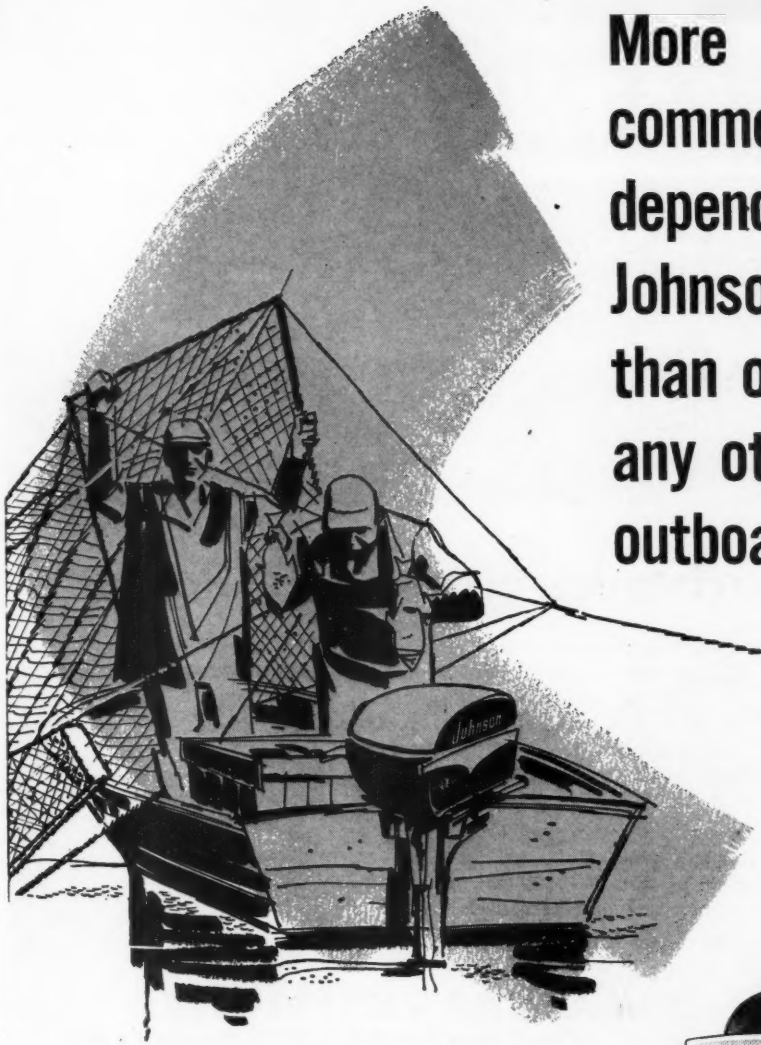
STANDARD OIL COMPANY OF CALIFORNIA, 225 Bush Street • San Francisco 20, California

THE CALIFORNIA COMPANY, P. O. Box 780 • Denver 1, Colorado

STANDARD OIL COMPANY OF TEXAS P. O. Box 862 • El Paso, Texas

FEBRU

More commercial fishermen depend on Johnson Sea-Horses than on any other outboard motor



In fresh, and salt water, too, fishermen find Sea-Horses are work horses

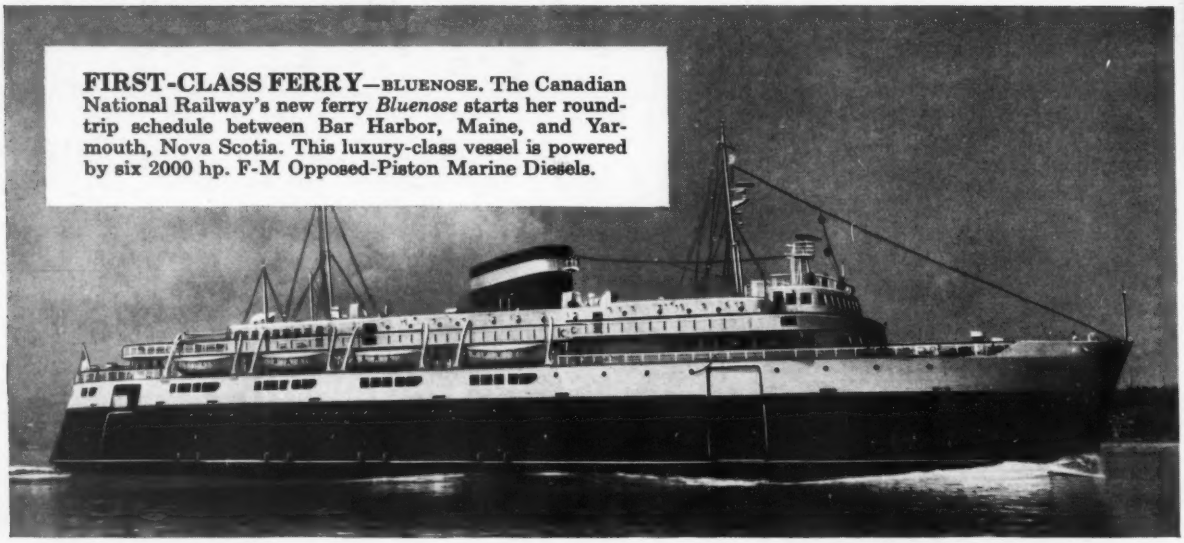
New for '57—"sweetest-running Johnsons ever"

There are two new power classes in our '57 line—with five load-saving Johnsons now delivering 18 or 35 hp. And there are the new 10, 7½, 5½ and 3 hp models, too. Nine new motors in all, from $155 to $625, each now equipped with a drive pin saving slip-clutch. And each protects against salt water corrosion, so no flushing is necessary.

Johnson leadership in commercial outboard sales and use stems from one fact . . . Johnson *dependability*. Hour after hour, year after year, Sea-Horses deliver the goods—at all speeds and under all conditions of load. See your Johnson dealer now. He's listed under "Outboard Motors" in the Yellow Pages.

FREE! 1957 Sea-Horse catalog, write: Johnson Motors, 163 Pershing Rd., Waukegan, Ill. (Div. of Outboard Marine Corp. In Canada: manufactured by Johnson Motors, Peterborough, Ont.)

A million Sea-Horse owners will tell you *JOHNSON KNOWS BEST*



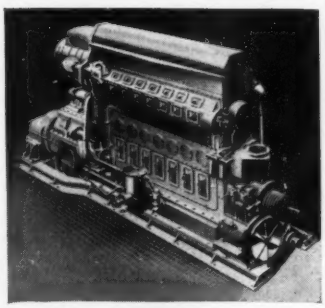
FIRST-CLASS FERRY—BLUENOSE. The Canadian National Railway's new ferry *Bluenose* starts her round-trip schedule between Bar Harbor, Maine, and Yarmouth, Nova Scotia. This luxury-class vessel is powered by six 2000 hp. F-M Opposed-Piston Marine Diesels.

BOTH have Fairbanks-Morse O-P Power

Wherever dependable marine power is specified—in design or repowering of any vessel from a ferry to a trawler—you'll find a Fairbanks-Morse Marine Diesel Opposed-Piston Engine.

When the *Holy Family* was repowered, her 325 hp. engine was replaced with a 445 hp. Model 38F O-P. It increased her free speed 15%, trawling speed 50%. Being a shorter and lighter engine, the O-P allowed a 30% increase in fish-hold capacity. Fuel capacity was also increased, extending her steaming range.

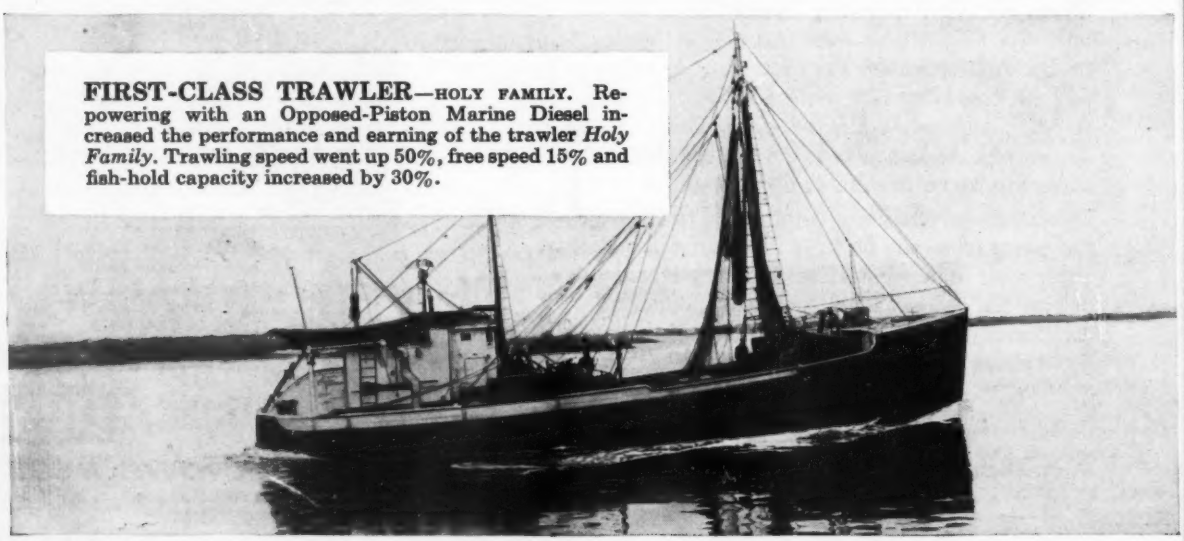
Performance of the *Holy Family* since repowering with O-P has increased the owners' profits by 26%—the crew has received a 52% increase in share. In addition, there are the added safety and reliability of an engine that "hasn't cost a lost day."



What O-P Can Do for You—send for your copy of the complete "*Holy Family* Report" . . . and see how an O-P of 200 to 2400 hp. can make money for you. Fairbanks, Morse & Co., Chicago 5, Illinois, Dept. NAF-2.

FAIRBANKS-MORSE
a name worth remembering when you want the BEST

DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • RAIL CARS • ELECTRICAL MACHINERY • PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS



FIRST-CLASS TRAWLER—HOLY FAMILY. Repowering with an Opposed-Piston Marine Diesel increased the performance and earning of the trawler *Holy Family*. Trawling speed went up 50%, free speed 15% and fish-hold capacity increased by 30%.

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NATIONAL FISHERMAN

The Fishing Industry Magazine

Boat Building Subsidy Would Aid Industry

A Bill to provide subsidies for the construction of fishing vessels was introduced in Congress last month by Rep. Cecil King of California. Designated as H.R. 3059, the Bill would allow any United States fisherman or fishing firm to apply to the Maritime Board for a construction-differential subsidy to aid in building a new fishing vessel.

Essential to the granting of such an application would be a declaration by the owner that: (1) the vessel would be used either for intensified fishing or military or naval purposes in time of emergency; (2) that the products caught by the vessel suffer from foreign competition so that the subsidy is needed to keep the American fishing fleet in such status of efficiency as is necessary to meet foreign competition.

The King Bill will be of considerable interest to various segments of the fishing industry which have suggested boat building subsidies as a means of strengthening the industry's competitive position against foreign producers, many of whom are subsidized.

Canada, for example, provides subsidies of as much as $255 per gross ton and $15 per horsepower for fishing craft of approved design and size. This subsidy can amount to 35 percent of the total cost. While previously limited to boats under 65 feet in length, the Canadian program for financial assistance in the construction of draggers and trawlers is scheduled to be extended to larger vessels of the Atlantic Maritime Provinces.

Among other countries aiding fishermen in the cost of vessel construction and modernization are Iceland, Norway and England. In England during the past three years, the Government White Fish Authority has provided approximately 50 million dollars to finance the construction and powering of over 370 new fishing vessels from 20 to 140 feet in length.

The British Grants and Loans Scheme, designed to revitalize the fishing fleet, has furnished about 15 million dollars in direct grants to owners and loans of 35 million. Under the program, grants have been approved for 113 so-called Near and Middle Water trawlers, which generally range from 100 to 140 feet in length. The maximum limit of grants for the larger vessels recently was raised to a figure of nearly $150,000.

Dr. Donald J. White, Boston College professor who has made an intensive study of the New England fishing industry, believes that boat owners are entitled to some direct assistance from the Government in order to compete with foreign producers on more equitable terms.

During the past decade there has been a relatively small amount of building activity in fishing vessels of 100 feet and over. Yet there has been a pronounced trend toward fishing on more distant grounds, for which larger vessels are needed.

In some of these distant areas, such as the Grand Banks, vessels of various foreign countries are now operating. If the United States is to maintain its position as a leading fish producing nation, it must have a modern fleet of capable, long-range vessels.

One of the strongest deterrents to building large fishing vessels has been the high cost of construction. A program of building subsidies would help greatly in meeting this problem, as well as stimulating the progress of the industry.

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Southern Representative: William C. Walters, P. O. Box 619, Atlanta 1, Georgia—Drake 8-0003

Moisture-resistant Styrofoam chosen again for boat insulation

The Minorcan is one of many 67' x 18' shrimp trawlers built by Diesel Engine Sales, Inc. of St. Augustine, Florida, using Styrofoam low-temperature insulation. The Minorcan is now owned by Mr. Henry C. Singleton.

In fleet after fleet, its remarkable combination of properties pays off in permanent insulation efficiency

It's easy to see why so many builders of fishing boats use Styrofoam* (a Dow plastic foam). It offers you a combination of properties that is unmatched by any other low-temperature insulation.

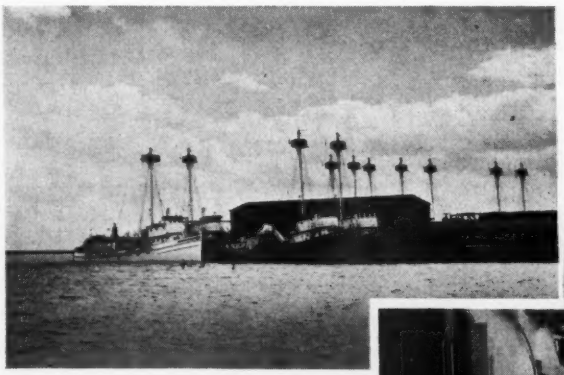
Because Styrofoam has superior resistance to water, its low "K" factor stays low. Styrofoam offers excellent compressive strength, light weight, permanent resistance to vermin and decay, low installed cost, and it won't pack or shift within the walls where it's used. These properties all combine to make Styrofoam the most economical, efficient, trouble-free insulation on the market today. In addition it offers top buoyancy—supports 55 lbs. per cubic foot. For your copy of the Styrofoam data book, contact Plastics Sales Department PL 1707J. THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Styrofoam is a registered trademark of The Dow Chemical Company

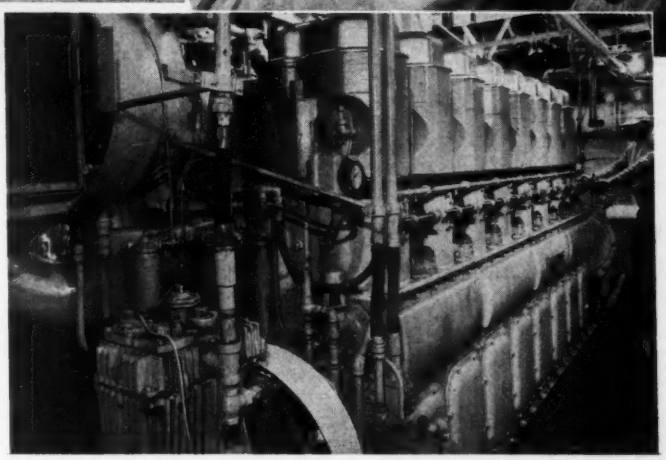
YOU CAN DEPEND ON DOW

"Fast-handling, trouble-free, smooth-operating —*that describes our Enterprise 800 H.P. Diesels!*"

Says Captain HUDNALL HAYNIE, skipper of the PARRAMORE BANKS since her commissioning in May of 1955. Powered by a big Enterprise Turbocharged DMG-38, rated 800 at 400 RPM, this steel-hulled fishing boat is the most recent addition to the Fish Products Company fleet.



The "Parramore Banks," shown with several of her sister ships at the Lewes, Delaware dock of Fish Products Company, is owned by Smith Enterprises, recognized as the largest fishery operators in the world. Of their 27 menhaden boats, 19 are powered by Enterprise Engines.



Second Engineer Earl Davis, pictured at the controls of the 8-cylinder Enterprise. When the fish are running the engine is often worked 15 to 22 hours a day, 7 days a week! This means that the speed delivered by this engine of about 12 knots or better, plus its trouble-free operation, are all-important.

"The engines in fishing boats take a beating," states Captain Haynie, veteran skipper of 27 years. "We do as much backing and filling as most tug boats. Much of this is in picking up the purse boats that carry our nets, sometimes as often as 10 to 12 times a day.

"This is a tricky business on an open sea. It takes a quick-handling engine that delivers the speed and direction we want—when we want it. Sometimes the lives of the 25 men in those purse boats depend on that. Within a few seconds after I signal, the Enterprise Engine switches direction. No hand-winding of cams into position for change of speed or direction. The Enterprise is completely automatic... simple and easy to operate.

"Space can also be a problem on a fishing boat," comments Captain Haynie. "The Enterprise we've got on board is at least 25% smaller than engines of equal HP which I used 10 and 15 years ago. That means an increase in our carrying capacity... and our earning power."

This kind of record can be yours, too, with Enterprise. Models from 73 to 7703 HP for every marine application. Write or call us today.

The Parramore Banks was built by RTC Shipbuilding Corporation, Camden, N.J.

Over a million horsepower at work the world over!

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A saga of five who had faith in shrimp

"First Family of Shrimp Fishermen"—that's the brothers Versaggi: John, Virgil, Joe, Manuel, and Dominick. Today they own and run the Versaggi Shrimp Company, one of the largest in the industry, with a fleet of more than thirty shrimp boats and a production rate of nearly 2½ million pounds of the curly crustaceans a year.

But the Versaggi family album records far more than facts and figures. It is a chronicle of the phenomenal growth of an industry itself, as well as a personal saga of American business acumen founded on an unshakable Old World loyalty to family. Faith, vision and daring have all played their part in shaping the Versaggi enterprise of today, starting from the day father Salvatore left his native Sicily and, with his wife Vincenzina, came to work in New York as a longshoreman in 1905.

Brooklyn winters were cold after the Sicilian sun, and soon Salvatore headed south to Fernandina, Florida. There he acquired his first boat, the *Mount Etna,* and shipped back to New York shrimp packed in ice-filled butter tubs. In New York, at first, they found their way chiefly to taverns, where they were served as a side dish—for these were the days just before shrimp began to ride the tide of today's popularity.

But by the time of World War I the shrimp demand began to increase. Expansion was in the air. Salvatore opened another branch at St. Augustine, Florida, some eighty miles south of Fernandina, in the first of a series of moves which were to spread the name of Versaggi all along the Atlantic and Gulf Shores.

When he died in 1925, Salvatore left a thriving business with a fleet of ten boats fishing out of St. Augustine and Fernandina. His sons carried on in true Versaggi tradition, with John the eldest leading the way. He was soon joined by Virgil; Manuel followed, then later the youngest, Dominick, who arrived by way of the U. S. Naval Academy and a tour of duty in World War II. Dominick lives in Patterson, Louisiana with his wife, two sons and a daughter. Joe, the third, remained in New York, where he had formed the Versaggi Fish Company with Manuel before Manuel joined his brothers in Florida. (Today Joe still operates out of New York, living on Long Island with his wife and seven children. The other brothers are based variously at the three production plants in Tampa, Florida; Brownsville, Texas; and Patterson, Louisiana.)

Once the marine diesel engine became practical, the brothers faced the expansion problem once again. After long deliberation in family conclave they decided to move operations to the Gulf Coast and build a first-class fleet of diesel trawlers.

The Versaggis reaped a rich harvest. In 1938 came the great shrimp rush at Morgan City, Louisiana, and they were ready. Five-day trips then brought 100 barrel catches, and 50-barrel trips were considered only average. During that Golden Era the Versaggis set an all-time record of 109 barrels of jumbos in one trip out.

With the second World War the fleet continued to grow. The brothers modernized with equipment designed to help the boats ride out the stormy weather so frequent in Gulf waters. Extra fuel and water tanks were added to permit extended tracking of the shifting shrimp fields. It was around this time that the Texas boom really got under way, and by March of 1947 six Versaggi trawlers were operating from Brownsville, Texas.

The brothers themselves reflect in every way the spirit of initiative and achievement that informed their father. John, born in Sicily, came with his parents to America and, like the others, was educated here. He is married, has two daughters and one son, and has served in the Florida legislature. There he established himself as a far-sighted exponent of sea food conservation, and helped to introduce bills to control fishing seasons on different species of shrimp.

Virgil, born in Brooklyn, served with the Coast Guard in World War II and has one daughter. He has proved himself to be a leader by coordinating activities of Texan and Mexican shrimp dealers, as well as by other wise counsel. He was the first president of both the Shrimp Association of the Americas and the Brownsville Shrimp Association, has served as a director of both the National Fisheries Association and the Texas Shrimp Association.

Manuel, who heads the company operations at Tampa, Florida was born in Florida, attended New York University, and served with the Army during World War II. He has two boys and two girls.

Added together, the time put into the industry by these five leaders totals well over a hundred productive years. Nobody thinks of the Versaggis separately. They're a family, a business, an institution even—all in one. From such a united fishing front the shrimp may scamper, but shall not escape.

MANUEL JOHN JOE DOMINICK VIRGIL

---the brothers VERSAGGI

The Pettit Paint Company is proud to print this story of an outstanding American family in the fishing industry.

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marine paint
Since 1861
PETTIT PAINT CO., INC.
Belleville, N. J. . . San Leandro, Cali.

FISHERY PROGRESS

► Record Fish Catch in 1956

United States and Alaskan commercial fishermen made a record catch of 5.2 billion pounds during 1956, Fish & Wildlife Service reported. Total production was 300 million pounds in excess of old record of 4.9 billion pounds in 1941. The 1956 catch included 2.8 billion pounds of food fish—100 million pounds more than in 1955—and industrial fish landings of 2.4 billion pounds.

Big catch of menhaden in Atlantic Ocean and in Gulf of Mexico was a principal factor in 1956 record harvest. Menhaden yield totaled 2,058,000,000 pounds, the first two-billion-pound catch of any one variety ever made by United States fishermen. This was an increase of 200,000,000 pounds over 1955 menhaden harvest.

Other species taken in considerably greater volume in 1956 than in previous year were, with figures for 1955 in parentheses: tuna, 330,000,000 pounds (271,000,000 pounds); Pacific and jack mackerel, 123,600,000 pounds (59,000,000 pounds); Alaska herring, 103,000,000 pounds (64,000,000 pounds); and Maine herring, 133,000,000 pounds (99,000,000 pounds). The catch of salmon amounted to 311,000,000 pounds, up 21,000,000 pounds from low 1955 catch. The landings of haddock likewise increased, amounting to 150,000,000 pounds, compared with 135,000,000 pounds in 1955.

Catches of a number of important species were down sharply in 1956. Production of Pacific sardines amounted to only 66,500,000 pounds, compared with 146,000,000 pounds the previous year. Preliminary data indicated that catch of shrimp was only about 220,000,000 pounds, against 236,000,000 pounds in 1955. Landings of ocean perch totalled 151,000,000 pounds, down 6,000,000 pounds compared with 1955.

► San Pedro is Leading Port

San Pedro, California, which has been leading fish landing port in United States for many years, again captured that honor in 1956. Fish production in San Pedro consisted largely of tuna, mackerel, and sardines, and totaled 382,900,000 pounds. Value of catch to fishermen was $29,000,000.

Gloucester, Massachusetts, led other food fish ports with receipts of 250,000,000 pounds, worth $7,600,000. Gloucester landings were mainly ocean perch and whiting.

Boston, Massachusetts, the Nation's principal port for haddock, cod and pollock, reported landings of 147,200,000 pounds worth $10,500,000 to the fishermen. San Diego, California, largely a tuna port, trailed Boston in poundage landed but surpassed the eastern city in value of catch. Landings at San Diego amounted to 135,300,000 pounds with a value of $18,800,000.

New Bedford, Massachusetts, famous for the scallop and flounder, had 88,000,000 pounds of fish valued at $12,350,000. Portland, Maine, largely an ocean perch port, followed with landings of 58,500,000 pounds, valued at $1,886,000.

► More Saltonstall-Kennedy Funds

Secretary of Interior Fred A. Seaton has increased by $3,595,000 the funds for market, technological and biological fisheries research and for exploration and development of U. S. commercial fisheries in fiscal year ending June 30, 1957. With the $3,000,000 currently allotted for this work, the total Saltonstall-Kennedy funds now available for fiscal year 1957 amount to $6,595,000.

Funds allotted through Saltonstall-Kennedy sources are larger this fiscal year than normal because Fish and Wildlife Act of 1956 permitted use of some accrued receipts. In the future the amount of money available through this source will approximate $4,500,000 per year. Funds for this activity are provided from customs receipts on fishery products.

New allocations increased amounts available for fishery biological studies in commercial fishery field from $1,376,500 to $3,394,000, an addition of $2,017,500. Other commercial fishery studies, which include exploration and gear research, economic research, market reports, market development and education, and technological research, have been allotted $2,814,000, an increase of $1,395,500 over initial amount granted.

► Fisheries Budget for 1958

President's budget for fiscal year 1958, which begins this July 1, includes request for $1,237,000 under Department of Interior regular appropriation for activities of Branch of Commercial Fisheries. An item of $300,000 is included for construction of a structure which would house fishery technological laboratory and exploratory fishing and gear development activities in Gloucester, Mass.

Also included in budget submitted to Congress is an item of $583,000 for making grants to public and nonprofit universities and colleges as may be necessary to promote education and training of personnel needed in field of commercial fishing.

► Record Groundfish Fillet Imports

Preliminary data indicate that imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets, including blocks, into United States totaled 138.6 million pounds in 1956. This was an increase of approximately 1.1 million pounds above previous record of 137.5 million pounds received in 1954.

► More Additions to Fleet

A total of 521 vessels of 5 net tons and over were documented for first time as fishing craft during 1956, compared with 418 during 1955—a gain of 25 percent. The increase in newly-documented fishing craft during 1956 occurred in following regions: Middle Atlantic, with 26, as compared to 13 in 1955; Chesapeake, with 138, for an increase of 84; and South Atlantic, with 119, as compared to 65.

New England had 15 additions to its fishing fleet; Gulf of Mexico, 100; Pacific, 76; Great Lakes, 6; and Alaska, 40. These figures were about the same or slightly lower than in 1955.

► Production of Fish Sticks

Preliminary data indicate that United States production of fish sticks in 1956 totaled 53.2 million pounds. This was a decrease of 19 percent compared with the 65.4 million pounds produced in 1955.

► Elimination of Salmon Traps

Congressmen Dingell and Bartlett have introduced in the House bills to provide for gradual elimination of salmon traps in waters of Alaska.

► Canadian Fishing Industry—1980

Preliminary report of Royal Commission on Canada's Economic Prospects makes a number of predictions concerning changing status of fishing industry over next 25 years. Included are the following:

1. Numbers of fishermen will decline by about one-sixth.
2. Greater efficiency of operation will allow these fewer fishermen to catch some 60 percent more fish than is being landed at present.
3. This smaller fishing population will be concentrated in fewer centers than at present.
4. Continued biological and technical research will be necessary to take full advantage of Canadian fishery resources.
5. Translating research findings into industrial application will require large capital expenditures.
6. With more people—about 26,000,000—and probably a greater per capita consumption of fish, the total domestic demand will be increased.
7. The United States will remain the most important export market, and any increase in U. S. tariff rates would have a directly adverse effect upon the prosperity of the Canadian fishing industry.

B.F.Goodrich

Spongex Floats carry a lot of weight in the Gulf

"Spongex® floats give us what amounts to 300% greater protection from loss of fish . . . nets and time", says Mr. George Castigliola, owner of the Lois Kaye, 128' all-purpose refrigerated flagship of the Castigliola Shrimp Co., Pascagoula, Mississippi.

"We use Spongex floats because we must have floats that hold ½ mile of seine net plus 25 tons of fish in the stiff gulf tide.

"This means", he continued, "our floats must have a buoyancy greater than the ordinary fishing net. They must be of the type to carry weight . . . compounded with a minimum of 100,000 fish at a time. So naturally the less water absorption, the better. We find all these qualities in Spongex floats plus the fact the 20 boys who work the purse boats find the nets 50% easier to handle.

"Net fishing is tricky business. It's easy to lose a net without the added buoyancy of Spongex floats. Once a net goes under, ordinary floats become waterlogged making it impossible to bring the net to the surface.

Mr. Castigliola concluded, "We are now planning a boat that will carry 1,000,000 fish at a trip. It is obvious we will look to B. F. Goodrich floats to buoy-up the larger nets we will need."

Captain Oliver W. Hunnings of the "Lois Kaye" says, "Spongex floats are stronger, longer-lived, and more buoyant than the old-fashioned wood or cork floats. Wood floats grow heavier as they absorb water, and make it tough for the men to haul in the nets during each set. We could only expect 3 seasons of use from wood floats, with the floats being relocated on the net each season . . . closer and closer to the purse boats as they became more and more waterlogged. These Spongex floats have been in use for two seasons and are still

in their original positions. The Spongex floats will also support a heavier load in the nets, since they are more buoyant than wood, thus enabling us to catch more fish in a single set than we would in the past."

For more information write B. F. Goodrich Sponge Products, a division of The B. F. Goodrich Company, 392 Derby Place, Shelton, Connecticut.

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B.F.Goodrich

SPONGE PRODUCTS

How Hull Shape Affects Fishing Boat Speed

The safety of fishing boats at sea, and their efficiency, could be increased if more of them were designed and constructed to the plans of naval architects, according to Jan-Olof Traung, Chief, Fishing Boat Section of the Fisheries Division of the Food and Agriculture Organization of the United Nations.

Writing on the subject "Fisheries and Naval Architecture", from which material for the accompanying article was abstracted, Mr. Traung points out that in addition to increasing the safety of fishing boats and their seakindliness, the naval architect can increase their efficiency while decreasing their operating costs. He explains what can be done to effect savings of up to 30 percent in fuel cost by using improved hull shapes.

THE technique of using models in predicting ships' speeds has naturally intrigued many workers, and it was only about one hundred years ago that an Englishman, Froude, succeeded in determining how a test with a model should be evaluated so that it represented the conditions of a full-scale ship.

Today, there are a considerable number of ship-testing tanks in many countries, and tens of thousands of models of ships have been tested, while methods of predicting resistance with the help of models have been refined. From the results of these model tests, the naval architect is today able to predict, relatively precisely, the performance of the boats he designs, and it is possible for him to see whether the proposed engine power is sufficient or not.

Naval architects think in terms of ratios, relations and co-efficients and when they see a boat on land they convert its proportions to such ratios to determine its quality. The speed/length ratio is the most important one. It determines the type of hull shape. It indicates also that the longer boat will obtain a higher speed in knots more easily than the smaller one.

Figure 1 shows typical data of beam, displacement and engine power for fishing boats from 33 ft. to 230 ft. The curves are based on data from a number of selected boats and the curves are given only to show the trend. They can be helpful in a fast check to see whether proposed measures of beam, displacement and engine power are nearly normal or not.

Figure 1 also shows the power necessary at certain speeds when the hull shape is extremely good (solid lines) and when of average quality (lines in dashes). As a matter of fact, the diagram is designed on the basis of the results from a great number of model tests with fishing boats. It shows that a main engine of 200 hp. will drive boats of from 65.6 to 105 ft. long at 9 knots in spite of the fact that the 105-ft. boat will have a displacement of 320 tons as compared with the 110 tons of the 65.6-ft. boat. The beam of the larger boat will be 24.2 ft. instead of the 19.7 ft. for the smaller boat.

This proves that the additional length of the larger boat decreases the required horsepower per tons of hull weight, offsetting the fact that the large hull is about three times heavier than that of the smaller boat. It shows how important it is to make boats as long as possible.

The same diagram shows also that with an engine power of 400 hp. a 69-ft. boat will make 11 knots. The same speed can also be obtained with the same engine power by a 148-ft. boat having 675 tons displacement, as compared with 125 tons for the small boat. A 69-ft. boat will require about 200 hp. to make 10 knots but twice the amount, or 400 hp., to make 11 knots. The same amount of power which raised the speed from 0 to 10 knots is required to increase it from 10 to 11.

This data emphasizes the importance of not installing a too powerful engine, at unnecessary cost, which weighs down the hull and takes up unnecessary space. It is evidently most uneconomical to double the engine power only to increase the speed from 10 to 11 knots. If the higher speed is absolutely necessary, something else must be changed, i.e., the boat should be made longer and/or lighter.

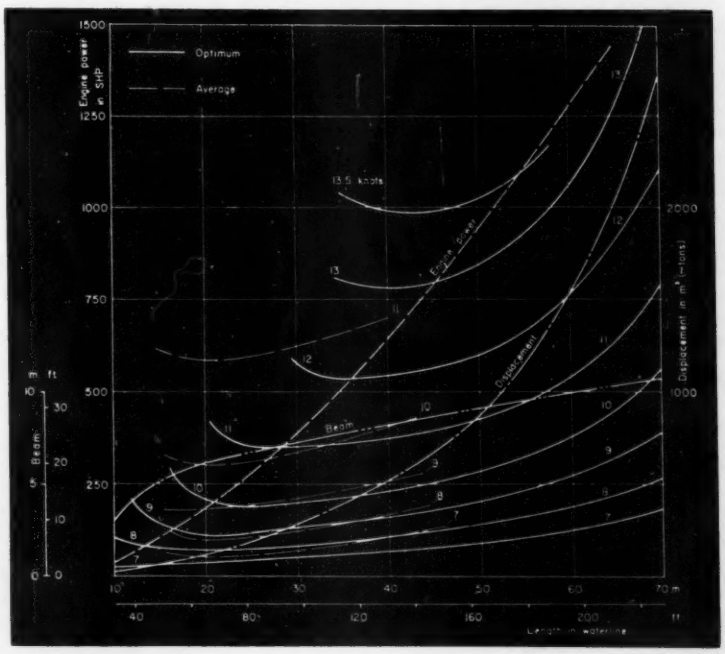
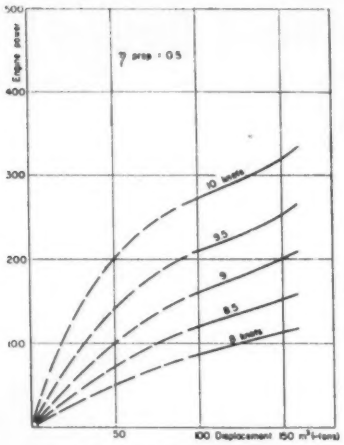


Fig. 1: Curves are given for displacement and beam of typical fishing vessels from 33 to 230 ft. A corresponding curve is given for the built-in engine power. Curves are also given for the power necessary to propel such boats at certain speeds. The solid line curves are for boats of optimum design and indicate how far the necessary engine power can be reduced if the hull shape is as favorable as possible. The lines in dashes show corresponding curves for average fishing boats in use today.

Relation Between Boat Weight and Fuel Consumption

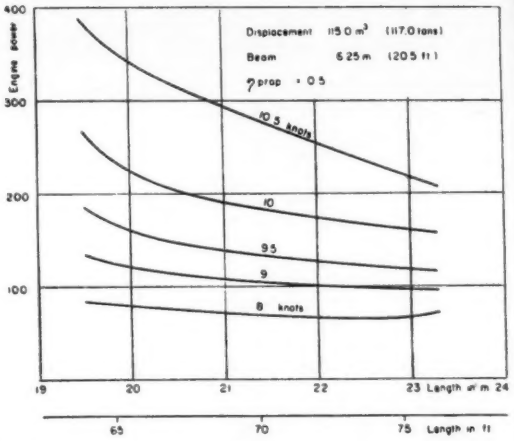
The weight of hull, machinery and cargo plays an important role in the fuel consumption of fishing boats. Figure 2 shows an average fishing boat tested on three different displacements. An increase of total weight from 100 tons to 150 tons, or by 50%, at 9 knots will require 25% larger output of the engine in order to maintain the same speed. An increase of weight, therefore, does not mean a proportionate increase in power.' However, care should be taken not to make hulls heavier than necessary or to design them so as to require permanent ballast to be carried.

A striking example of the decrease in power requirements when the displacement and beam are unchanged but the boat lengthened, is given in Figure 3. It shows how a 65.6-ft. boat will require 220 hp. at 10 knots but when lengthened by 10 ft. to 75 ft. will only require 160



Left, Figure 2: Shows how much more hp. is needed to maintain same speed when fishing boat displacement is increased.

Right, Figure 3: Shows how much less hp. is needed with the same displacement and beam when the boat is lengthened.



hp., i.e., by merely lengthening the boat, the resistance, and thereby the fuel consumption, decreases by 27%. The reason is, of course, that the boat will travel in a lower speed/length ratio where the specific resistance is lower. This diagram should be studied together with Figure 1, which shows the changes in required horsepower when the displacement is also increased.

Trim by the Stern Is Best

Fishermen have always appreciated the influence of trim, and after delivery they frequently re-arrange or add ballast in order to obtain the best possible trim of their vessels. Then they often find that a trim by the stern is the best. There are different reasons for this. One is that the propeller gets better submersion and that less aerated water is soaked into the propeller.

It is found from the design of large ships that the center of buoyancy should be rather far aft of the midship section in ships traveling at high speed/length ratios. A center of buoyancy 2% aft of mid-length has been considered to be the optimum position. An investigation of quite a number of model tests with fishing boats shows quite clearly that for these somewhat beamier and heavier ships the center of buoyancy can be still further aft. Heavy weights, such as engines, fuel, tanks, and superstructures should be placed as far aft as the hull shape will allow.

Importance of Sharp Forebody

In one specific fishing boat model, it was quite evident that a center of buoyancy 3 to 6% of the water line length aft of mid-length gave the lowest resistance. With the center of buoyancy far aft, a sharp entrance is obtained, rather than the full forebody which is obtained by having the center of buoyancy too far forward. One of the reasons for the decrease in resistance with the center of buoyancy far aft is that the angle of entrance plays a very important role in the resistance of such relatively fast vessels as fishing boats.

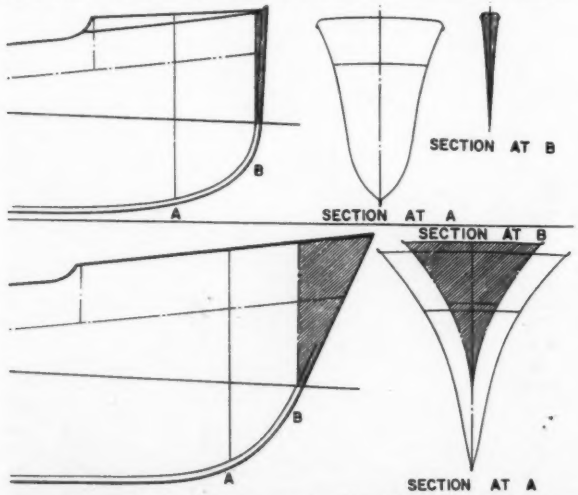


Figure 4: Trawler bow shapes, showing the older full forebody type with plumb stem, and the sharp angle of entrance with raked stem of a modern vessel. The latter design produces a boat with less resistance in smooth water and lessened tendency to pitch in a rough sea.

The angle of entrance of the water line is a typical measure of the shape of fishing boats. Experience has shown that a sharper angle of entrance gives less resistance. For example, a certain type boat having a half angle of entrance of 36°, required 173 hp. to make 9 knots. When the angle of entrance was decreased to 21½°, the necessary power decreased to 135 hp. This indicated that the boat with a fuller entrance angle required 27% more power.

Investigation into quite a number of model tests proves that the half angle of entrance of the datum water line of fishing boats should be less than 25° for smaller boats and less than 20° for medium sized vessels.

The maximum beam in the water line necessarily limits the entrance angle, and as the smaller boats have proportionally larger beam, their entrance angle will be larger. One does not seem to gain very much in making the entrance angle extremely knife-sharp or the water lines hollow. The water line can run straight and turn nicely at a point slightly aft of mid-length into the aft body. A forward shoulder should be avoided.

Boat with Sharp Entrance Pitches Less

The need for having a relatively sharp entrance for fishing boats has frequently been challenged, and one of the arguments against it has been that such a ship would be more liable to pitch than a ship with a fuller water line forward. However, Hunter (1952) has very clearly shown (see Figure 4) how a foreship with a sharp entrance and raked stem resists pitch better. There have been a number of model tests with both small and large fishing boats carried out in a head sea, all of which have proved that the sharp forebody produces the better ship from a pitching point of view, as well as a ship which loses less speed in a head sea.

Mockel (1955) has investigated the loss of speed in different types of weather of a trawler outward bound and trimmed down by the stern, and homeward bound and heavily trimmed down by the head because of the full fish hold. The speed loss in the condition when trimmed by the bow and sailing against seas was considerably greater than in the case of stern trim. For example, with the wind at Beaufort No. 6, the speed loss on the outward trip amounted to 8%, while on the homeward voyage in similar weather it was 15%, or nearly double. During this homeward voyage the vessel had a fuller water line forward, and this was the reason for the greater loss of speed.

(Continued on page 39)

Harvesting Rough Fish in Lake Winnebago

Wisconsin fishermen catch four million pounds sheepshead each year in Conservation Department's control program

LAKE Winnebago, in the Eastern half of Wisconsin, has often been called an "inland sea" because of its large size in relation to most other Midwest waters. It covers 215 square miles and has a maximum depth of only 20 feet. Since there is no stratification of the water at any time, the entire lake is available to fish as feeding grounds, and its fertility is assured by rich farm lands on the Fox and Wolf River watersheds.

Like many other lakes favored by game fishermen, Winnebago has a problem of rough fish control. The most common rough fish species are the carp and sheepshead. For many years large seines have been used to control the carp population on their spawning grounds, and this has proven so successful that the abundance of this fish has decreased remarkably during the last 10 years. With less effort needed to reduce the carp population, greater efforts now are being made to control the sheepshead.

Richard F. Harris, fish management supervisor for the East Central Wisconsin area, said it is the feeling of State fish management men that if a sufficient reduction could be made in the sheepshead population, then this niche could be filled with the more desirable fish species. Once the slack has been filled with game fish, there will be less space to be occupied by the sheepshead.

At any rate, Mr. Harris believes that the sheepshead population in Winnebago should be harvested. He points out that sheepshead catches are necessary and useful to the animal food business. As a valuable resource, the sheepshead ought to be harvested to the fullest extent.

Biologists estimate that Winnebago contains at least between 25 and 30 million pounds of sheepshead. This fish is in demand by mink ranchers in Wisconsin, who because of the high prices of horse meat are turning more and more to fish as a volume mink food. Winnebago provides the only large lake sturgeon population left in the United States, with 75,000 pounds being speared during some Winters.

With this as a background, the Wisconsin Conservation Department began to enlist the help of commercial fishermen along with its own crews to operate hoop and trap nets in the lake. Seining was ruled out as being ineffective except during spawning time, whereas trap nets could be operated over a longer period—even under the ice. One definite advantage of a trap net over other gear is that it is fishing 24 hours a day, even though the men are not.

Fishermen Work Under Contract

Early sheepshead control operations by the Wisconsin Conservation Department proved rather ineffective, in that only one-half million pounds of sheepshead were taken annually for several years. By shifting to the trap net and enlisting the help of four contract commercial fishermen, the Conservation Department was able to step up the annual production in Winnebago to 3½ million pounds in 1955, and hoped to go over the 4-million-pound figure in 1956.

About 75,000 pounds of sheepshead which were seined while spawning in eight feet of water in Wisconsin's Lake Winnebago. The fish in the bag are ready to dip. Seine length is 5,000 feet.

Lake Winnebago is heavily settled on all shores by people who fish for sport, and they will tolerate commercial fishing only if they feel it is to their benefit. However, the rough fish operation is in its third year, and generally has been well accepted by the public.

Practically all sheepshead control operations are presently conducted the same way, each operator having a series of trap nets with 400-foot leads and 12-foot pots, which are set under the water far enough so that boat traffic can clear the webbing. Buoys are the only markers the boat navigators need to be on the lookout for.

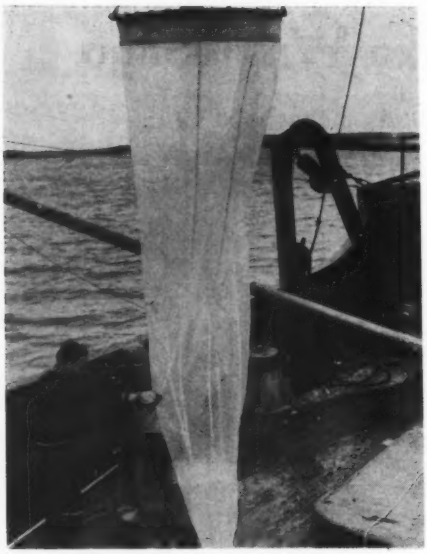
Steel boats 30 to 40 feet long, with a 12 to 15 foot beam, are standard equipment in the sheepshead control operations. These craft have a small cabin, which is up forward, in order to leave as much deck storage space as possible. A carrying capacity of 10 to 20 thousand pounds is required when the nets are fishing well.

During the period when fishing is best, usually from April to July 1, sheepshead are sold at the docks for 2½ cents a pound. July 1 is usually considered the start of the rest month, when all nets are out of the water being retreated and repaired. The fishermen use the new Olson copperized preservative, which makes the nets jet black.

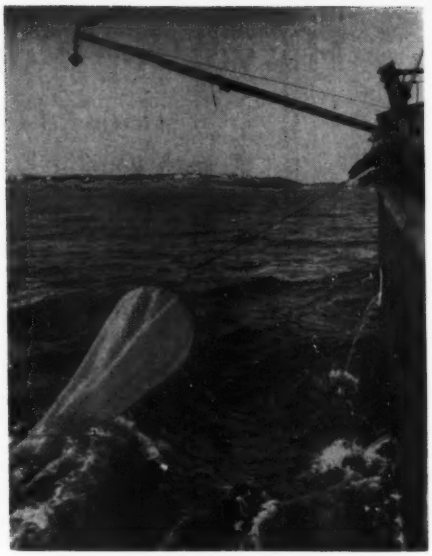
Beginning August 1, the price of sheepshead goes up to 3 cents a pound, because production is lower at this season and the webbing requires much more in the way of replacement due to the warm water temperatures.

(Continued on page 42)

Dipping sheepshead from trap nets set under 36 inches of ice on Lake Winnebago in Wisconsin. The nets are lifted twice a week, and have 600' leads.



Loren Harvey, left, crew member, and Alva Farrin, Fish & Wildlife Service fishery aide, washing down the plankton net on the 96' Portland dragger "Silver Bay", which was chartered last Fall by the Fish & Wildlife Service for herring research in the Gulf of Maine. At right, the plankton net in the water.



Newly-Discovered Spawning Ground on Georges May Hold Key to Herring Fluctuations

THOSE puzzling fluctuations in the Maine sardine herring catch are being probed into by Fish & Wildlife Service scientists, who have come up with some interesting discoveries. For instance, during cruises aboard the chartered fishing vessel *Silver Bay*, they learned that most of the herring spawning last Fall occurred on Georges Bank, more than 150 miles east of Cape Cod. Previously it had been assumed that the main bulk of herring spawning took place in the coastal areas.

The researchers hope to continue their Gulf of Maine herring study as an annual project, in order to determine whether last Fall's herring spawning on Georges was an unusual occurrence. Back around 1947 or 1948, large numbers of mature herring were present along the Maine coast. However, their numbers have dropped off since then, and last Fall herring spawning off the shores of Maine, New Hampshire and Massachusetts was of only minor importance.

The Atlantic Coast herring investigation is a joint project of the U. S. Fish & Wildlife Service and the Fisheries Research Board of Canada. The purpose of the work is to find the principal spawning grounds of herring in the Gulf of Maine and to study the survival of newly hatched herring. This research is expected to provide information regarding the causes for fluctuations in the catch of small herring, known as sardines.

The United States' part of the project is in charge of Fishery Research Biologist Leslie W. Scattergood, while S. Noel Tibbo directs the Canadian operations. The two countries are interested in the same problems, and exchange information and compare herring research results.

"Silver Bay" Cruises Offshore Areas

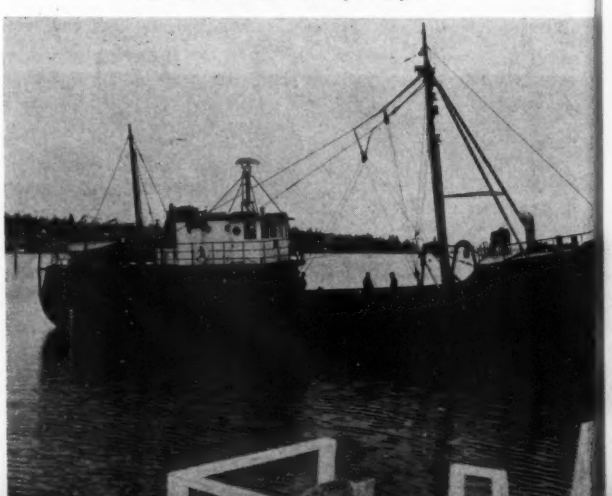
The U. S. Fish & Wildlife Service is utilizing Saltonstall-Kennedy funds for the herring project. The 96' Portland dragger *Silver Bay* was used in the research from September to December 1956, when the vessel suspended operations for the Winter. The *Silver Bay* ran out of Boothbay Harbor, Maine, cruising the offshore areas, while the cooperating Canadian ship *Harengus* sailed from St. Andrews, New Brunswick, and covered the coastal areas.

The *Silver Bay* carried her regular crew of 7 fishermen during the herring research cruises, being skippered by Capt. Harvey Small. Fishery biologists and aides aboard the boat numbered three, making 10 men altogether. It was the first time the Gulf of Maine has been covered in a survey of this type for herring.

The *Silver Bay* made three cruises in September, October and November. These cruises lasted two weeks each, and the total distance covered was 3500 miles. The research vessel caught tiny herring and the accompanying plankton in a Hardy continuous sampler device, as well as in a large nylon net which was fished every four hours. These devices were towed off a boom, one at the surface, and the other at a depth of 30 feet. The vessel was operating at a speed of 10 knots, over waters of 20 to 40 fathoms in depth.

From the collections, it was found that in the Fall of 1956 the area in which the greatest herring spawning occurred was on Georges Bank. Fishermen were making

96' dragger "Silver Bay" of Portland, which was chartered by Fish & Wildlife Service for herring research. She is equipped with 562 hp. Enterprise Diesel, RCA Radiomarine telephone, radar and Fischlupe, two Raytheon "Fathometer" depth recorders, 68 x 48 Ferguson propeller, and GTS-15 Surrette batteries, and uses Gulf fuel and lube oils. Harold Paulson is her port captain.



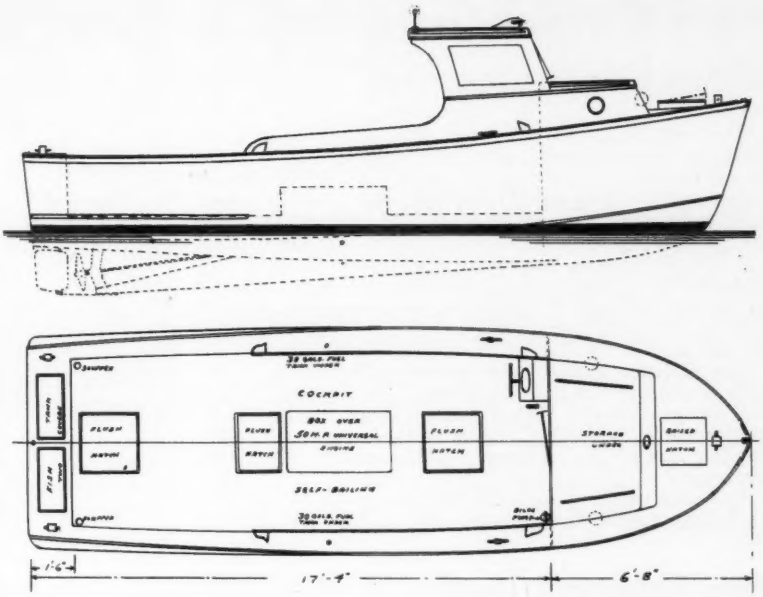
Self-Bailing Cockpit Feature Of 24' Fishing Boat Design

THE accompanying plans are for a small fishing boat, 24' x 7'5" x 2'2". She is newly designed by Wm. J. Deed of Perth Amboy, N. J., and will be built by Robert F. Sims of Osterville, Mass., for himself.

This boat has liberal flare and freeboard, the form being V-bottom with convex sections below the chine forward. She has single ¾" planking on the topsides, with ¾" x 2¼" seam battens. There is double planking on the bottom—¼"inside and ½" outside, with canvas between. The boat is bronze screw fastened.

There are three flush hatches, and one raised hatch forward. The self-bailing cockpit has two scuppers aft, with a bilge pump forward. Sixty gallons of fuel are carried in two tanks on either side.

The direct drive 50 hp. Universal engine will be installed under a box in the long cockpit, and will swing a 13" x 10" propeller at 3000 rpm. A speed of 15 miles an hour is expected.



Outboard profile and arrangement plans of 24' fishing boat designed by William J. Deed of Perth Amboy, N. J., for Robert F. Sims of Osterville, Mass.

only small catches of herring off Nova Scotia and in the Bay of Fundy area at the same time the large amounts of spawning herring were found on Georges Bank.

An interesting observation made by the scientists was that in September the spawning herring were found mostly on the Northern edge of Georges Bank, but in October they were located in a greater area which extended over the southeast part of Georges. During November the herring were quite widespread over most of Georges Bank, and some even were found north of Georges, which might indicate they were carried by currents over this larger area.

The Hardy continuous plankton sampler device towed by the *Silver Bay* collects plankton on rolls of silk screening. Each roll will hold the material collected during about 500 miles of cruising. The silk is wound up in a basin that contains formaldehyde, which preserves the plankton right away.

The plankton net towed by the *Silver Bay* is of fine mesh nylon, 39" across the mouth and about 14' long. A current meter in the mouth of the net measures the amount of water strained. The Hardy recorder and the plankton net complement each other. There is a small cod-end on the plankton net.

Vertebrae Counts May Show Origin of Herring

By means of vertebrae counts, scientists believe they can determine whether the herring on Georges Bank are the same as those found in the sardine fishery. It has been shown that the colder the water at the time of hatching, the more vertebrae in the herring, which might make it possible to differentiate between young herring produced on Georges Bank and young produced off Nova Scotia.

The *Silver Bay* put out 4,000 drift bottles containing an identifying card and reward announcement, in order to find out how circulation of water currents influences the drift of tiny herring. In addition, the Canadians and the Woods Hole Oceanographic Institute carried on experiments with transponding radio buoys in the Bay of Fundy.

Small herring are 1/3" long when first hatched, and are used for packing when they are between 10 and 20 months of age. Production of young herring in recent years has fluctuated more than it has in the past. It is known that predators eat large quantities of herring, and in the future the scientists hope to learn more about the early life of herring and what governs success of survival.

Although the cruises of the *Silver Bay* have had to be suspended for the Winter, the Fish and Wildlife Service vessel *Delaware* was expected to make a trip in January in the same general area and collect information on the distribution of young herring in this season of the year. In future cruises it may be possible to follow the migrations of small herring in offshore regions to coastal areas where they are found in late Spring and Summer.

Airboat Used in Florida For Mullet Gill-Netting

Airboat gill-netting in Florida's Lake Okeechobee is a new twist in an old fishery, reports the Fish & Wildlife Service. An enterprising mullet fisherman at Okeechobee reasoned that rowing around a school of mullet was too slow and difficult and decided to speed up the operation.

To expedite the plan, a three-foot extension was built on the stern of an airboat hull to house a 220-yard gill net. The airboat, powered by a 100 hp. Lycoming aircraft engine, is capable of speeds in excess of 40 miles an hour. The aluminum hull is 15' long with a 5' beam. The steering mechanism consists of a pair of air rudders behind the propeller and is operated by the driver with a connecting steering stick. The driver steers the boat while sitting in an elevated bucket seat, which permits him to see the schools of fish more easily.

The net is customarily set at full speed. When a school of fish is located, the captain maneuvers into a desired position and a two-pound net anchor is cast overboard. The net anchor is attached to the lead and cork lines of the gill net. The drag of the anchor pulls the net from the compartment as the boat circles the school. After the boat completes the circle, the fishermen retrieve the net, stowing it in the compartment. In retrieving the net the enclosure becomes smaller, forcing the fish to strike the wall of mesh, thus becoming entangled.

The net is a typical mullet runaround gill net, 24 meshes deep, 4¼" stretched mesh, and No. 6 nylon twine.

North Carolina Oyster Yield Shows Great Increase

State Fisheries Commissioner Gehrmann Holland reported to the State Board of Conservation at Raleigh last month that the production of oysters in North Carolina last year showed a great increase over the production for 1955. Oyster output rose from 41,360 tubs in 1955 to 107,390 in 1956.

It was pointed out that this increase in production was made possible mainly through the appropriation of $85,000 for buying equipment needed in expanding the oyster planting program and for the actual planting of oysters and shells.

Commissioner Holland, in reporting on shrimp, said there was no explanation for the fall in shrimp production. He pointed out that there are large quantities of small shrimp in North Carolina waters at present, and that this is a good sign for a plentiful supply of shrimp next year.

Menhaden catches increased last year, with 278,307,000 fish being caught, as compared with 219,813,000 fish in 1955.

Shrimp Exploratory Cruises to be Made

G. B. Talbot, director of the Fish & Wildlife Service laboratory at Beaufort, announced recently that two more cruises are planned in Carolina waters this year with the 96-ft. vessel *Combat*. One of the cruises is planned for April or May and will cover both North and South Carolina waters, and the other is scheduled for Fall. The exploration will be carried out between the 20 and 350 fathom depths.

Recent exploration off the South Carolina coast turned up large numbers of rock shrimp. Although these shrimp are hard to clean, the Fish & Wildlife Service is working with manufacturers of automatic peelers and deveiners to develop a method of mechanical cleaning which will not damage the shrimp.

Menhaden Boats Doing Well

Menhaden boats fishing for Beaufort Fisheries of Beaufort were doing well early last month. W. H. Potter of the firm said that the boats had two good days during the first two weeks of January and that they were taking small fish between Beaufort bar and Bogue Inlet.

Beaufort Fisheries is the only menhaden plant in the area which operates the year around.

Report Big Catches of "Swelling Toads"

Thousands of pounds of what are called "swelling toads" have been brought into the fish houses at Ocracoke recently. This fish, which resembles a toad and porcupine combined and goes under several names, reaches the tables of the New York hotels as "sea squab". There it is considered an expensive delicacy.

Oyster Bed Opened to Dredging

Rose Bay, Hyde County's famed oyster-producing area, was opened to dredging January 1. Opening of the bay, closed all year, was recommended by Dr. A. F. Chestnut, director of the University of North Carolina Institute of Fisheries Research at Morehead City.

Investigation showed that Rose Bay now has many oysters of marketable size.

Storing Fish Oil in Big Tank

A new milestone has been passed in the menhaden industry and exporting business at Morehead City. A 500,000-gallon storage tank has been leased by Acme Mercantile Co., exporters of fish oil. The Acme firm buys fish oil from local factories and stores it in the tank until ships call for it for export to Europe.

Harmon Willis, left, skipper of the new 55' shrimper "Miss Peele", and Frazier Peele, owner, both of Hatteras, N. C. The vessel was constructed by Morehead City (N. C.) Shipbuilding Corp., and has 6-110 General Motors Diesel, Stroudsburg 515½T winch and 750-watt Onan auxiliary generating set.

Mississippi Oyster Reefs Opened to Dredging

Oyster reefs, excluding those specifically designated for tonging, were opened on January 16 to dredging operations. The Seafood Commission reported that recent inspection showed oysters on the Square Handkerchief Reef are in excellent condition.

Fishermen were warned not to operate dredging equipment on officially designated tonging reefs. These include an area in the Back Bay of Biloxi; the Bay of St. Louis north of the Louisville and Nashville Railroad Bridge; an area beginning about a mile offshore at Bay St. Louis and Waveland; off Pass Christian and Long Beach; and Graveline-Round Island to State line.

Heavy Crab Catches Reported

During a 24-hour period early last month 170 barrels of oysters and 1,100 pounds of crabs were landed in the Biloxi area, while the Pascagoula landings totaled 9,000 pounds of crabs.

Crab meat production in Biloxi and Pascagoula added up to 1,300 pounds during this 24-hour period.

Improvements in B. C. Midwater Trawl

New improvements have been made in the midwater trawl, which was adapted for the herring fishery of British Columbia by the Fisheries Research Board of Canada. The net now can be operated from single gear trawlers, putting it within the economic range of relatively small type vessels. A new type of otter board permits trawling both in midwater and on the bottom without damage to the gear.

W. E. Barraclough of the Fisheries Research Board, who has been in charge of the midwater trawl development, said that recent fishing from the chartered boat *Phyllis Carlyle*, a single gear otter trawler, has been successful in taking herring from midwater depths down to within two fathoms of the sea floor.

The new midwater trawl is a four-sided net, having an opening of 30 feet at its front end. A combination of aluminum alloy trawl plane floats and newly developed hydroplane floats keeps the net from touching bottom, thus preventing damage from fouling on the sea floor. The new otter doors are also made of aluminum, and can operate efficiently both in midwater and for bottom trawling.

Canada Foresees Increased International Competition For Fish Stocks

AN era of highly intensified competition for the fish stocks off her coasts is shaping up for Canada's fishermen as the result of expansion of International fleets. This new development was revealed by Deputy Minister George R. Clark of the Department of Fisheries, who spoke in Ottawa at the three-day annual meeting of the Fisheries Research Board of Canada.

Outlining the nature of this growing competition, Mr. Clark said that it is coming not only from an expansion and modernization of fishing fleets already operating off Canada's coast, but also from the very likely entry of other nationals into these prolific fishing grounds.

If Canadian fishermen are to be able to compete for their share of the catch, Mr. Clark said, it is imperative that they keep up with modern development in vessels and gear. He added that the Canadian fishing industry will be placing greater reliance than ever before on the work of fisheries scientists to meet this competition.

To Plant Disease-Resistant Oysters

An experience-proven plan to speed the rehabilitation of depleted oyster grounds in two Atlantic provinces will be launched this year by the Canadian Department of Fisheries. The plan will involve the re-seeding of oyster beds with oysters from Prince Edward Island, which are felt to be disease-resistant.

The areas to be seeded are located in parts of the Northumberland Strait shore of Nova Scotia and certain New Brunswick waters, in which approximately 90 percent of the oyster stocks have been destroyed during the past two years.

Experience in Prince Edward Island showed that oyster stocks in the disease-stricken areas eventually recover if left to themselves over a period of from 10 to 15 years. Most important feature of this recovery is that the new stocks are resistant to the disease.

Experimentation has also shown that the recovery period of recently affected areas can be greatly reduced, in some cases cut in half, by introducing relatively small numbers of disease-resistant oysters. These serve as a breeding stock and their progeny inherit the disease-resistant characteristics of the parents.

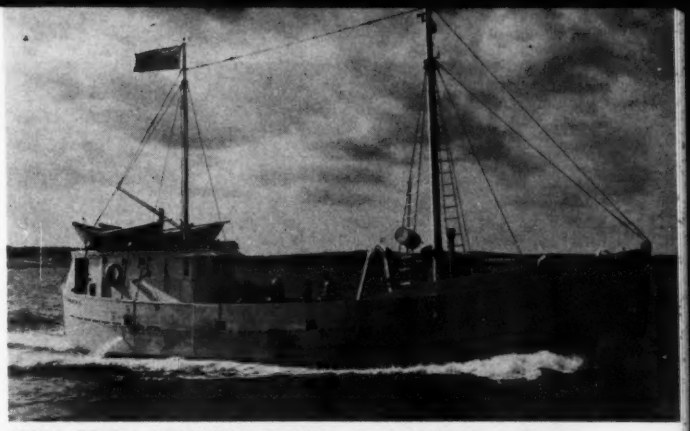
Two New Redfishing Areas Discovered

Following a long list of similar finds in the past by the Canadian Fisheries Research Board was the recent discovery of two new redfishing areas on the banks east of Newfoundland. One area north of Flemish Cap yielded catches in sufficient abundance to indicate good commercial fishing possibilities in the 200-250 fathom depth range.

Investigations to find good fishing grounds for herring, which are subject to frequent fluctuations, indicated that they can be taken in June with drift-nets in the offshore areas of Hermitage Bay and Bay d'Espoir on the south coast of Newfoundland. The presence of a Summer spawning stock on Georges Bank was also confirmed.

Continuing research on lobsters, which are the basis of the most valuable inshore fishery on Canada's East Coast, showed that conservation measures adopted in the past are paying off in higher returns from the fishery. As the result of an extensive educational program, the regulations introduced on the basis of scientific findings are now generally supported, and there are even movements in the fishing ranks for larger size limits.

In the failing clam fishery, the introduction of mechanical harvesters was found to have generally beneficial results, while reducing the destruction of under-sized clams. In addition, careful studies are being made with regard to introducing the European oyster to Maritime waters. If this experiment proves successful, it would partly fill the need left by the reduction in the clam population.



NOVA SCOTIA SCALLOPER "AEGIR", skippered by Capt. George Crouse, is one of four scallop draggers owned by Adams & Knickle Ltd. of Lunenburg. The 80' scalloper has landed some good trips, including one of 34,900 lbs. She is powered by a WM-1197 Wolverine-Waukesha Diesel, rated 210 hp. at 1400 rpm., installed by Lunenburg Foundry & Engineering Ltd., and has Twin Disc power take-off, 54 x 40 Michigan propeller, Marine Products bilge pumps, Willard batteries, Ritchie compass, Hathaway winch and Snow-Nabstedt reduction gear.

Nature was given a helping hand at Jones Creek, B. C., where the Canadian Fisheries Department and the Research Board planted millions of salmon eggs in an artificial spawning bed constructed in association with a power development. The scientists were able to observe the complete cycle of a race of salmon, because the experiment was successful and the salmon hatched there ultimately returned to their man-made spawning ground, offering prospects for establishment of new runs in this manner.

Refrigerated Sea Water for Preserving Fish

One phase of the Canadian Research Board's technological work on the Pacific Coast may result in a method other than ordinary icing being used for preserving fish aboard the catching or transporting vessels. Successful experiments have been carried out with tanks of refrigerated sea water, in which fish have been kept at sea in excellent condition for periods of more than two weeks. This method of preserving quality could eliminate almost entirely the use of crushed ice, and simplify problems of loading and unloading. Some commercial fishing concerns in British Columbia are now installing storage tanks in their vessels like those developed by the Board.

The use of chlortetracycline (Aureomycin) in various phases of fish preservation, pioneered at the Vancouver Technological Station by Dr. H. L. A. Tarr, is of far-reaching importance. Successful trials have been made with various types of fish; over 1,000 tons of ice have been treated with minute quantities of the antibiotic to extend the keeping time of fish, and further experiments are under way. Preservation of fish with this antibiotic was recently legalized by the Food and Drug Directorate of the Canadian Department of Health and Welfare.

No Overfishing in Great Slave Lake

The Canadian Fisheries Research Board heard reports of investigations being conducted in Great Slave Lake in the Northwest Territories. The commercial catch of this Lake has been carefully sampled since 1945, when fishing was first allowed, in order to detect the effect of fishing on a stock of fish never before exploited. Commercial fishermen are allowed to take a total of 9,000,000 pounds of whitefish and trout from the Lake.

In 1955 fish companies operating on the Lake used more boats and employed more men than in the past several years. The fishing effort was 57 percent higher than in 1954, and resulted in a 19 percent increase in the Summer catch. No evidence of overfishing has been detected. Tagging studies indicate that movements of fish in Great Slave Lake are limited.

Wilson Shrimp Company's 67' trawler "Miss Bobbie" of Tampa, Fla. She was built by Diesel Engine Sales Inc., St. Augustine. Her topsides are finished with International paint; she is insulated with Styrofoam, and is rigged with Columbian rope. The vessel's equipment includes D342 Caterpillar Diesel, 48 x 36 Columbian propeller, 3:1 Twin Disc reduction gear, Goodrich Cutless stern bearing, Marine Products pump, Surrette batteries, 515½T Stroudsburg hoist, One-Mile-Ray searchlight.

Florida Shrimpers Hit By Stormy Weather

A cold front with winds up to 54 miles an hour last month struck the shrimp fleet off Dry Tortugas, sending two shrimp vessels to the bottom. The *Little Jimmie* and the *Wassie J. Jr.* sank, but the crews of the vessels were rescued by the Coast Guard.

Several vessels including the *Atlantic*, *Miss Carolyn* and the *Pacific* were aground, and the *Cola II* was reported in distress. The *Carolina Kid* also was reported in distress, five miles east of Rebecca Shoals Light, with the mast, boom and propeller shaft broken.

The 83 ft. fishing boat *Mary Ann* sank at the end of a tow rope on January 21, but that did not end efforts to save the stricken boat. The *X88*, another fishing boat, continued to tow the *Mary Ann*, which was 80 ft. beneath the top of the water. The vessel is owned by Jesse Stewart of Punta Gorda.

Fishermen Ready for Mullet Season

The closed season on mullet ended January 20, and all gill netters and commercial seine fishermen were busy hanging in new nets and seines. At this season of the year, the commercial fishermen are forced to use smaller size meshes, as the mullet are much smaller than in the regular running season in October and November.

New Law on Shrimp Count

A new Florida State Conservation law, which went into effect on January 12, establishes a count of 50 shrimp, heads off, to the pound for the Tortugas area. Leaders in the industry feel that the production of larger shrimp will increase after a period of one year.

Take over Amason Enterprise Dock

Hilbert and Charles Kiesel, in partnership with Mike Bassetta, have taken over the Amason Enterprise Dock at Fort Myers Beach and will operate in the future under the name of Beach Shrimp Co. Thirteen boats will operate out of this dock, including those owned by the partners, and those owned by Don Kiesel, George Kiesel and their brother-in-law, Ted Wang. Amason will continue his packing operations from the dock.

Reports Given on Red Tide Research

Progress reports on red tide research were presented last month to a legislative committee which was set up to find means of dealing with this problem. The red tide and possible methods of eliminating it have been under study by the Fish & Wildlife Service, the University of Miami's Marine Laboratory and the State Board of Conservation.

New Fishing Boat Delivered

John Ferguson of the St. George Packing Co., Fort Myers Beach, has recently taken delivery of a new fishing boat equipped for deep-water fishing. Built by Diesel Engine Sales, St. Augustine, the new boat, named the *John Williams*, is now on its first fishing trip to the Campeche grounds.

Durham Fish & Oyster Co. Sold

J. H. Park and wife have bought the Durham Fish & Oyster Co. of Daytona Beach. The wholesale and retail seafood outlet was started in 1943 by Glenn Durham. The main building has a sales and display room, a 16 x 18 ft. walk-in cooler and an office.

Connecticut Draggers to be Taxed by Town of Stonington

Draggers in the Stonington fishing fleet have been added to the town's tax list for the first time, as part of a drive being conducted throughout the entire State to pick up tax money on all classes of boats. Draggers were added to the list with the cooperation of the Southern New England Fishermen's Assoc., which aided in getting information concerning all boats registered out of Stonington.

Relieving the blow somewhat is a legislative bill under which tax exemptions would be provided for commercial fishing vessels for gear and other equipment used in the pursuit of their business. The purpose of the bill, which was sponsored by Rep. Malcolm D. Perry of Stonington, is to grant the same exemptions to fishermen as are granted to farmers.

Fishing Fleet Bothered by Dogfish

Stonington draggers, plagued by frigid weather during the month of January, were further hampered by an invasion of dogfish. Dragger captains complained that the unwanted fish ripped their nets and chased the better grade market fish from the area, thus reducing the normal catches by the fleet.

Dragger Back in Service

The 51-ft. fishing dragger *Mildred and Myra* of Stonington, Capt. Frank Sennett, is back in service after being disabled just outside Block Island Sound early last month.

The dragger sprung a leak while returning from a fishing trip, loaded down with about a ton of fish.

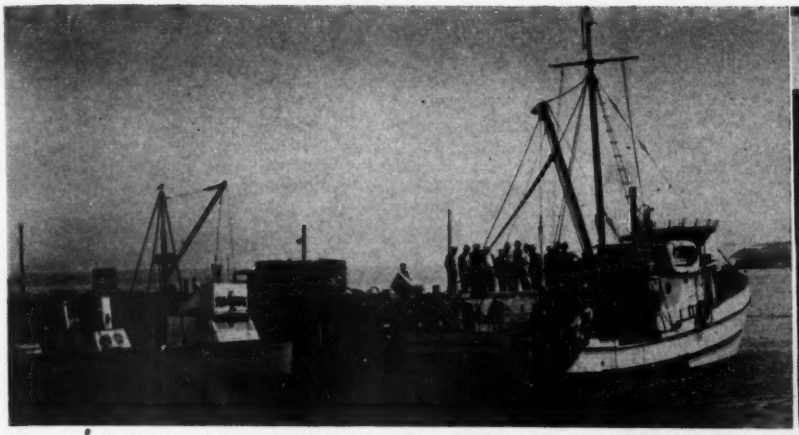
Alabama Reports Very Good Red Snapper Production

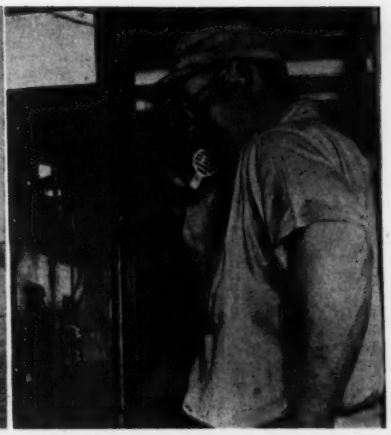
Alabama snapper production has been extremely good for the past couple of months, despite temporary spells of bad weather. Star Fish & Oyster Co. of Mobile reported a mid-January catch of 21,000 lbs. for the *Baby Ann*.

Shrimp production was drastically off, with no fresh shrimp. Frozen shrimp is filling in the void. Prices are high, and expected to rise even higher.

New Vessel Under Construction

A new boat is under way at Krebs & Co. in Pascagoula, and will be added to the fleet of Star Fish & Oyster Co. of Mobile. The keel has been laid, with construction scheduled to be completed next October or November. The boat will be 75 ft. long with a beam of 21 ft. and a draft of 10 ft.





58' trawler "Mel-Don" of Morro Bay, Calif., in with a 12,000-pound catch of fish from the banks off San Simeon. At right, skipper-owner Neil Burton talks by radiotelephone to fish distributor representatives about his catch.

A Trip Aboard California Trawler "Mel-Don"

THE small Pacific Coast trawlers running to sea week in and week out, throughout the year, are an important source of salt-water fish for the fresh fish markets in the West. Off the California coast, the catch is mostly rock fish—red rock cod, bass, sea trout, ling cod, a few halibut and sand dabs. Rock cod are caught best from November to May, and sole fishing is better during the Summer months, when they come into shallow water, say 40 to 60 feet. The fish move in and out on the phases of the moon, and in Summer and Winter.

Typical of California's small Northern trawlers is the 58-foot *Mel-Don,* operated by owner-skipper Neil Burton out of Morro Bay, Calif. Twice a week in all but the foulest weather, Capt. Burton, who hails from Long Beach, Calif., heads around the channel circling tall Morro Rock, on his way to a favorite spot a few miles off San Simeon, some miles up the coast. There on the fishing grounds he knows the bottom 600 feet down is mostly flat and sandy, with just enough rocky patches to rip a thousand dollar net to shreds, if it should get caught on the rocks.

Capt. Burton then starts a two to three hour vigil of running at slow speed as the 150-foot-long, open-mouthed trawling net, with 5" mesh, drags along the ocean bottom. The boat covers about 2½ miles of ground in one hour, and Burton goes by the Loran and depth sounder. The *Mel-Don* usually fishes at depths of 50-300 feet for rock cod, but sometimes goes down to 600 feet.

The *Mel-Don* runs steadily while she is dragging. When the donkey engine begins hauling up the heavy-laden net, hundreds of sea gulls appear and hover, screaming as they wait for fish. Suddenly huge pockets of the net, crammed with tons of red and grey fish, heave themselves to the surface of the sea.

On a rough day, the *Mel-Don* will be rolling heavily at this point in the operation, rails going under as her whining winch hoists one pocket of fish after another into the air, and then swings it expertly inboard.

With any luck, the *Mel-Don* will take 12 tons of fish at a single haul of her net. She can carry 30 tons in her forward hold and on deck. But when the weather is rough and the deckload of knee-deep fish is sliding forward, aft, to port and starboard, skipper Burton usually leaves well enough alone with one fair haul.

The *Mel-Don* can operate with skipper Burton and one crew member. While Burton is at the wheel, the deckhand loads as much of the catch as possible into 150-pound boxes. The *Mel-Don* doesn't use any ice, as her hold is refrigerated at about 30 degrees, and she delivers her catch every day or two days at the most.

The vessel is powered with a 6-cylinder, 175 hp. Allis-Chalmers engine with 2:1 Twin Disc reduction gear, and is equipped with ½" Roebling trawling cable. She has a Northern winch of 10 tons capacity, which is run off the main engine, geared down.

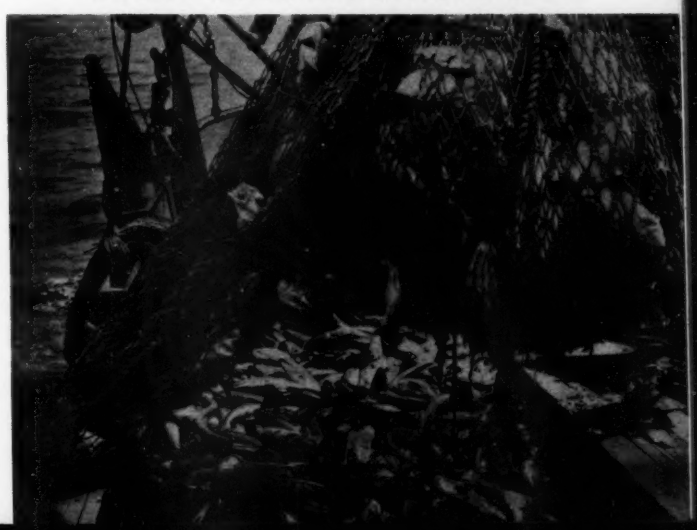
Within minutes after the *Mel-Don* ties up at her Morro Bay pier, winches are hoisting the boxes of fish up and loading them into waiting trucks. Pickup trucks representing such distributors as Western Sea Foods Co., National Sea Foods Co., and Pacific-California Fish Co., all of Los Angeles, and like companies from Monterey and San Francisco, handle much of the Morro Bay catch.

At 4¢ a pound for the fish whole in 150-pound boxes (furnished by the distributors and wholesalers), Burton's 12,000-pound haul represents a gross of $480.00. There are sometimes top days when he will make several hauls and return to port with a capacity load of 30 tons of fresh fish.

A good deal of the fish caught by the Morro Bay trawlers is sold through Vic Lindwall's Morro Bay Fisheries Inc. Lindwall fillets part of the catches and does his own selling to the trade. The balance of the catch he sells to the distributors whole.

Skipper Burton, who has fished salmon in Alaskan waters, tuna off Mexico, the Galapagos, and in the South Pacific, says he is happy stringing along with a small trawler these days. "Maybe I don't make a fortune," he says, "but current markets absorb all the fresh fish I can catch."

Tons of fish just hauled up from the ocean floor 600 feet down by the trawler "Mel-Don" out of Morro Bay, Calif. Included in the catch are chili-peppers, bocaccio (red), ling cod, petrale sole, English sole, sand dabs, rex sole, sable, rose fish and Dover sole.



67-foot "Lyco VII", one of seven identical shrimp trawlers built last year by Diesel Engine Sales Inc., St. Augustine, Fla. Owned by F. K. Lytle, the vessels operate from Aransas Pass, Tex., and J. E. Zorn is fleet manager. Equipment includes General Motors 6-110 Diesel with 4.5:1 reduction, 50 x 44 five-blade Columbian propeller, 3 kw. Onan Diesel generating set, Jabsco pump, Goodrich Cutless stern bearing, Surrette batteries, Walter keel cooler, Columbian rope, Stroudsburg hoist, 3" Tobin Bronze shaft and Dow Styrofoam insulation.

Texas Shrimpers Hampered By Rough Weather

The last week of December and the first three of the New Year have a general reputation for bad weather, and this period usually is devoted to repair activity on fishing boats and gear. Both factors are noticeable in the lower production of seafoods.

During this 30-day period, total landings of shrimp reported at principal ports on the Texas coast were 1,223,500 lbs., as compared with 1,283,400 lbs. for the same period last year. The catch was one million pounds below that of the preceding 30 days.

Demand was good with prices firm, and all shrimp were from the Gulf of Mexico, with a large percentage landed at Central and South Gulf ports.

Edible finfish production was good, with plenty of speckled sea trout, red drum, some whiting and butterfly black drum. Red snapper landings were off due to bad weather and because of boat repairs. Incomplete reports on landings of edible finfish showed 218,000 lbs., with prospects of a sizable increase for the next 30 days when gill-netting gets underway.

Oyster production was increasing last month. After bays were closed to shrimping on December 15, many small-bay trawlers converted to oyster dredging for operation along the middle and upper coast.

Reefs in the Port Arthur-Sabine area on the extreme northeast coast have been producing oysters of good quality. Galveston Bay reefs and others along Matagorda Island and the Rockport area are being worked.

Fishing Vessel Burns in Gulf

The fishing vessel *Marguerite* burned and sank in the Gulf of Mexico last month, with one crewman receiving burns that hospitalized him. The Coast Guard said the vessel was from Corpus Christi and had caught fire 10 miles south of Horn Island, off the coast of Mississippi. The crewmen were transferred to a nearby boat, the *Olivia Sekul* of Pascagoula, Miss.

Would Stop Seining in Laguna Madre

Rep. Menton J. Murray of Harlingen has filed a bill with the Texas Legislature to stop seining of fish from Laguna Madre in Cameron County. This bill would also prevent the taking of black drum by commercial fishermen in the lagoon unless authorized by the Game and Fish Commission. The taking of drum would be confined to December, January and February.

Shrimpers Battered by Heavy Seas

Several shrimp trawlers battered by heavy seas in the Gulf of Campeche sent out distress signals within a few hours after being hit last month by the worst "norther" of the season.

The trawler *Miss Emma* of Fort Myers, Fla., taking on water and in danger of foundering, was assisted by the trawlers *Gulf Rita* and *Pot O'Gold*, to Campeche on the lower coast of Mexico.

The trawler *Vega* was driven aground 600 miles south of Port Isabel after losing a rudder. The *Vega's* crew swam through heavy surf to safety.

The *Capt. Young* was crippled when it struck a rock in Yucatan Peninsula and was escorted to Campeche. The *Margaret D. Webster* and *Valley Pride* were taken into Port Isabel after being disabled.

The *Francis F.* put out an emergency call after she had become disabled. The high seas were driving the boat on shore when the crew was rescued by the Coast Guard 25 miles north of Port Aransas.

Bays to Be Opened to Shrimpers

According to present plans of the Texas Game and Fish Commission, bays, straits and inland salt water lakes will be open to shrimpers with large trawls beginning March 1. Shrimp fishermen are cautioned to write the Commission at Austin or get in touch with local wardens to learn what special provisions, if any, will apply to them.

New Net House Being Constructed

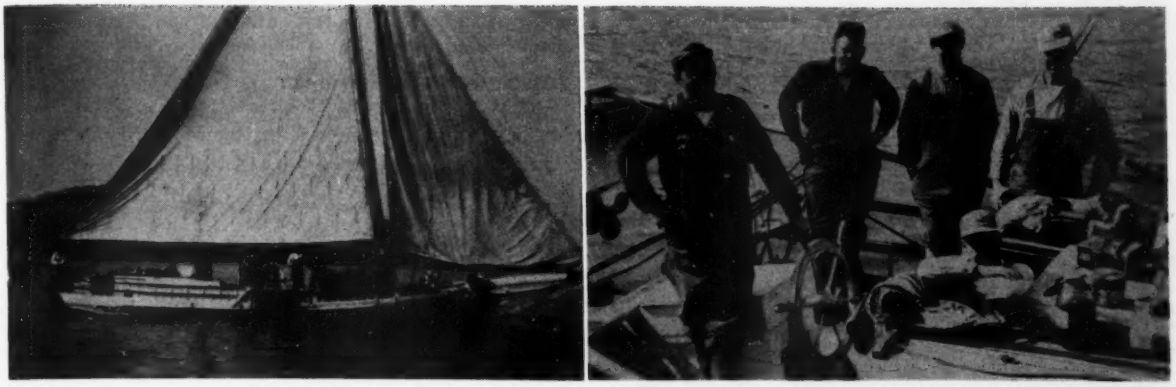
Casey Seafoods at Aransas Pass is building a new net house alongside their processing plant on Conn Brown Harbor. Casey Zorn, operator, also announced recently the purchase of a 79-ft. shrimp trawler, which will be reconditioned before joining the company's fleet.

Shrimp Association Re-elects Herndon

On January 12, members of the Texas Shrimp Association held their annual meeting in Brownsville, with an estimated attendance of 200 persons. All phases of the Association's activities were discussed by committee chairmen. Arnie J. Suomela, Acting Director, represented the Bureau of Commercial Fisheries of Washington, D. C.

Sydney Herndon was re-elected President; John Carin-

The "Betty II", 36' boat used for groundfishing, is owned by John M. Violet of Newport, R. I. Her equipment includes 132 hp. Lathrop LH Super gasoline engine, Willard batteries, Danforth anchor and 20 x 18 Columbian propeller. She was built by F. D. Winchenbaugh of Friendship, Maine, and uses Texaco lubricating oil.



45' oyster dredger "Ruby G. Ford" of Smiths Island, Md., and her crew. From left to right are: Capt. Daniel Harrison, part owner; Perry Sneade, Jr.; Edward Harrison, brother of the skipper and part owner; and Gordon Evans. Down the hatch is Fred Crockett, the cook. The "Ruby G. Ford" last month rescued two crewmen from the dredge boat "Eldora", which capsized and sank off Cove Point in Chesapeake Bay.

has, Jr., Vice President; Robert Clegg, Secretary; and Sam Snodgrass, Treasurer. Norvell Jackson will serve as Chairman of the Board with the officers.

Concentration of Turtles Seen

Reports were circulating last month on the tremendous concentration of leatherback turtles seen along the Texas Gulf Coast off Rockport and Port Aransas. This unusual and unaccounted for concentration extends for a distance of some 30 miles along the shoreline and to within 75 yards of the beaches.

At the beginning of the century, this area produced many tons of green sea turtles each year.

Maryland Bill Would Require Licensing of Small Nets

The Tidewater Fisheries Commission is again seeking legislation to tighten its control over Maryland watermen. A bill to require the licensing of small fish nets was introduced in the House of Delegates last month.

The current law requires commercial fishermen to pay license fees on gill nets more than 100 yards long and on pound nets, haul seines and fyke or hoop nets longer than 40 yards.

The new bill would require all fishermen—commercial and non-commercial—to license the smaller nets, as well. It would also allow the Commission to limit the number of nets in operation, and would enable them to keep a more accurate tabulation of the catch.

Studying Soft Clam Spawning and Setting

The recent development of a valuable clam fishery in Maryland has served to focus attention upon the relatively unexplored life history of the soft-shell clam. At present a study of the spawning and setting of the soft-shell clam is in progress at Solomons.

Another study relating to soft-shell clams has been completed in Queen Anne's County waters by the Department of Research and Education. This study was made to determine the effects of the hydraulic dredge.

There is considerable friction in the County between the clam and oyster fishermen, and the result of this study will be awaited anxiously by both groups. Recently legislation was presented which would outlaw hydraulic clam dredges in Queen Anne's County waters.

Bill Would Open Potomac to Dredging

Legislation which would remove the ban on dredging in the Potomac River has been introduced in the General Assembly by Senator Phoebus of Somerset. Only tongs can be used in taking Potomac River oysters at present.

On January 19 a meeting was held at Princess Anne, which was attended by about 75 Eastern Shore oystermen. They gave their unanimous backing to a proposal that Potomac River oyster beds be opened to dredges.

Ideas to help increase Maryland's oyster production were aired in Crisfield on January 12, when about 50 tongers, dredgers and businessmen attended a meeting called by George M. Staples of Crisfield. The discussion was divided into three groups of ideas, with various agencies suggested for different phases of the proposed work to be done.

Charles W. Howeth of Chas. W. Howeth & Bro. of Crisfield recently wrote to State Senator Phoebus offering suggestions for increasing Maryland's oyster supply.

He believes that if the hand scrapers were allowed to go into Tangier Sound and scrape the rocks, it would cultivate the rocks and make them fit for growing oysters. After these rocks are worked and are in condition for growing oysters, then Mr. Howeth believes that small boats should go into Holland Straits and other areas, take up the young oysters and plant them over the rocks in Tangier Sound.

Oyster Dredge Crew Has Narrow Escape

Five Smith Island watermen narrowly escaped drowning last month when their dredge boat, the *Eldora*, Capt. Edgar Bradshaw, capsized and sank off Cove Point in Chesapeake Bay. The men were dredging for oysters when a heavy gust of wind caught the sails and capsized the craft. She sank within a few minutes.

Capt. Raymond Evans in the dredge boat *Mary Somers* went to the rescue, and picked up Capt. Bradshaw and two of his crew. The other crew members were rescued by the *Ruby Ford*, Capt. Daniel Harrison.

New Jersey Catch Shows Gain

Landings of fish and shellfish at New Jersey ports during the first eleven months of 1956 amounted to 502.4 million pounds valued at 13.2 million dollars—an increase of 23 percent in volume compared with the corresponding eleven-month period of 1955. The gain was due primarily to greater catches of menhaden (up 94.9 million pounds).

Seafood production in November 1956 totaled 3.4 million pounds valued at $719,000 to the fishermen. This was a decrease of 22 percent compared with the poundage landed in November 1955. The decline was caused by reduced landings of fluke, scup, sea bass, whiting, and oysters. Fishing operations were curtailed by inclement weather during this period.

California Tuna Industry Has Good Year

The Southern California tuna industry racked up its biggest sales year in 1956. Sales amounted to 10 million cases, or about 20 percent greater than a year ago.

Southland fishermen also had a big year, unloading 160,000 tons of tuna, as compared to a 1955 catch of 126,000 tons. About 85 percent of the U. S. tuna catches are made off Southern California.

Tuna production by the San Diego fleet increased last year. Tuna deliveries by the bait boat fleet, largely operating from San Diego, rose in 1956 to about 110,000 tons from the record low of 88,000 tons in 1955.

The 1956 production by tuna canneries at San Diego climbed to 73,000 tons from 44,000 tons in 1955.

Agree on Mackerel and Tuna Prices

About 60 purse seine fishing boats sailed on January 3 from San Pedro, after boat owners and canners agreed on new mackerel prices. Mason Case, manager of the Fishermen's Cooperative Assoc., said canners will pay $42.50 per ton for a general mackerel order. The price will jump to $47.50 if species or size is specified in the order.

San Pedro and Long Beach canneries the third week of January signed contracts with the Fishermen's Cooperative for the 1957 tuna season. The prices are $270 a ton for yellowfin and $230 for skipjack.

Harold Cary, manager of the American Tunaboat Assoc. said contracts with San Diego canneries do not expire until April 1.

Catching Saury Proves Profitable

Frank Iacono of San Pedro, owner of the 40-ft. fishing boat *Dor-Ann*, is now spending part of his time hauling in loads of Pacific saury for Coast Fisheries, Inc., a San Pedro cannery.

The saury, sometimes called the needle fish, is considered by most fishermen as just food for albacore and tuna, and not worth much commercially. However, Iacono is making the catching of this species a profitable business, selling it for $25 a ton to be mixed as fill fish with mackerel in making up dog and cat food.

Poor Sardine Season Reported

Monterey sardine fishermen who returned from San Pedro during the January "light of the moon" reported the present season is one of the poorest in history. The California State Fish & Game Dept. confirmed this appraisal, with the statement that the catch in December was slightly over 1700 tons, bringing the seasonal total to about 31,000 tons, with less than a month left of the season.

On the other hand, oystermen of Morro Bay are enjoying a harvest of fine 24-30 month old Pacific oysters.

San Francisco Fish Pier Project Shelved

San Francisco wholesale fish dealers showed insufficient interest in a proposed modern fish pier to be built by the State, and the project has been shelved for the time being. The pier was to be a modern version of New York's Fulton Fish Market, and the State wanted dealers to guarantee they would sign long-term leases once the pier was completed.

"Mercator" Lands First Tuna of 1957

The first tuna clipper arriving in San Diego during the new year was the *Mercator*, unloading a trip from the Tres Marias Islands off the West Mexican coast on January 1.

Thirty clippers, all of which returned to port from the fishing banks since the canneries ceased operations on December 20, started unloading their fish wells at the Westgate-California and Star Kist cannery docks on January 2.

Vessels Lost During Year

Ten vessels in the San Diego fishing fleet were lost during 1956. This was two fewer than in 1955 and 14 less than in 1954.

Included in the list were the *Explorer, Sunset, Husey, Leona B., Sun Dial, Betty G., Calart, Aqua Blanco, Victory* and *Hornet.*

Operating out of Peru

Seven San Diego tuna boats are operating in South American waters for the Westgate-California Tuna Packing Co. cannery at Paita, Peru. The vessels are the *Mary Jo, Sun Splendor, Judy S., Fatima, Sea Giant, Talisman* and *Sun Streak.* This makes a total of 18 San Diego clippers that now are fishing for refrigerating plants and canneries in South America and Puerto Rico. The vessels will be gone about a year.

Agree on Price for Crabs

After more than a month of negotiating, representatives of the Humboldt Fishermen's Marketing Assoc. and buyers for Eureka fisheries reached a price agreement of eight cents a pound for crabs. The crab fishermen had sought ten cents a pound, but the local fisheries contended that they were unable to pay that much.

Prior to the settlement, it was reported that crabs were large and of good quality. Bill Baldwin from Crescent City took nine dozen jumbo crabs in five hours at Pozzi Beach just south of that city, and from all indications good crab fishing lies ahead in Northwestern California.

Albacore Boats Return

Last of the Moss Landing albacore fishermen to return to port after a long and strenuous season were Capt. Oren Addleman on the *Dolores J.* and Capt. Bill Harder of the *Seaway.* The men said there were still about 50 boats fishing for tuna out of San Diego at the time they left, and boats were averaging around 100 fish a day, or about half a ton. Normally the season ends late in October.

Morgan Transferred to Puerto Rico

Harold Morgan, Jr., fleet captain of the Van Camp cannery at San Diego, has been transferred to Puerto

STANDING KNEE-DEEP IN PACIFIC SAURY are Frank Iacono, left, owner of the 40' "Dor-Ann" out of San Pedro, Calif., and Ralph Dilorio. The saury were sold to Coast Fisheries Inc., to be made into pet food. This fish is normally found in the San Pedro area only in the Summer months.

Rico to supervise the operation of the fleet of 11 tuna clippers fishing for the company's tuna plant in the Caribbean.

The fleet includes the *Sea Magic, Royal Pacific, Katie Lou, Far Famed, Intrepid, Western Ace, San Joaquin, American Beauty, White Star, Chicken of the Sea* and the *American Queen.*

New Owners for Several Boats

New fishing boat owners in the San Francisco area, and their boats are as follows: the 41-ft. *Widgeon,* co-owned by Jack Deal of Albany and Gertrude P. Roberts of Oakland; the 35-ft. *Ten-Aya,* Luther E. Newman of San Francisco; the 41-ft. *Edith A.,* Robert W. Pearce of Alameda; the 40-ft. *Mary Agnes,* Lloyd Lowe of Mendocino; the 41-ft. *Madelyn,* Marvin and Marion Hoy of San Rafael; the 60-ft. *North Star,* James Bowles of Vallejo; the 33-ft. *Condor II,* Jack W. McKay III and Howard H. Keith of Monterey; the 33-ft. *Roz,* Julio and Olivia A. Laurrauri of Monterey; and the 27-ft. *Dorothy M.,* Norman Curtis of Oakland.

Boat sales moved along at a fast clip in Moss Landing during the months of December and January. New boat owners include Ray Stone of Lodi, purchaser of Capt. Bill Windbigler's 41-ft. troller *Janie W.* The vessel is equipped with a 3-cylinder Gray marine Diesel, Wood-Freeman automatic pilot, and 6-spool Kolstrand salmon gurdies. Stone will use the *Janie W.* exclusively for salmon fishing in the Fort Bragg-Eureka area.

Ralph Brazil of Seaside sold his Monterey type boat *Tramp Troller* to Roy Howland of Alameda. The boat is powered by a Chrysler Crown 115 engine, and has Wood-Freeman automatic pilot and 6-spool Kolstrand salmon gurdies.

Van Camp Closes Terminal Island Plant

Shutdown of the N-K plant of the Van Camp Sea Food Inc. on Terminal Island was announced last month. The plant, which handles mainly sardines in oval cans and also tuna, normally closes about February 1 when the sardine season ends, and reopens when the tuna season gets underway.

A steady flow of tuna in the past few months has enabled the firm to establish a more stable operation in the C-P plant, and the N-K plant now is not needed to handle any tuna overflow.

Not to Raise Commercial License Fees

The California Fish & Game Commission recently recommended that licenses for sports fishermen be raised, but rejected higher fees for various commercial fishing operations. The license raises must be approved by the State Legislature.

With the increased revenue, the Fish & Game Dept. would increase their aid and development program for the benefit of both commercial and sport fishermen. The Department would seek to re-establish the depleted white sea bass and barracuda fisheries.

Trollers Form New Association

Fishermen of Monterey and Moss Landing are being asked to join a new organization recently set up in Oakland, named the Central California Trollers Assoc. Fishermen of this area have long felt the lack of organization in their ranks. Their work takes them from port to port along the coast during the season, and there is no time then for concerted action.

First steps to remedy this situation were taken when the group met at Evans Radio Dock in Oakland and drew up by-laws and elected officers, as follows: Dave Davisson of Oakland, president; Marvin Hoy of Sausalito, vice-president; Helen Evans, secretary pro-tem. Area representatives are Dave Krueger, Berkeley; Jim Butler and Carroll Wadsworth, Oakland and Alameda; Marvin Hoy, Sausalito; and Bob Frederickson, Petaluma and Vallejo.

Purpose of the association is to interest all unorganized fishermen in central California. First business of the group will be to push legislation moving the salmon season ahead to April 15, instead of the usual May 1 opening. The season would close two weeks earlier—September 15 instead of the 30th.

NEW OFFICERS OF SAN PEDRO FISHERMEN'S CO-OPERATIVE holding their first conference. Pictured are, left to right: Anthony Pisano, secretary; John Zankich, president; and Tony Barcott, vice-president. Joe Califano, treasurer, is not shown.

Fishermen's Cooperative Elects Officers

John Zankich of San Pedro was elected as the new president of the San Pedro Fishermen's Cooperative Assoc. on January 2. Other new officers are Tony Barcott, vice-president; Anthony Pisano, secretary; and Joe Califano, treasurer.

Named to the board of directors with the officers were John Evich, Andrew Tipich, John Resich, Orfeo Kostrecich, George Fukuzaki, Matt Karmelich, Andrew Kuljis, Tony DiLeva, Bill Horner, Frank Foretich and Andrew Rafkin.

Santa Cruz Busy Port During Winter

Despite the Winter season, there is considerable commercial fishing activity in the port of Santa Cruz. A number of vessels are delivering fish to buyers there, the largest boat being the 60-ft. dragger *West Wind,* recently chartered by Capt. Dick Maier. His catches of rock cod, king fish and sole are being sold to the General Fish Corp. Capt. Guy Canepa of the *St. Augustine* is also selling to this firm.

The *Buona Madre,* Capt. Jimmy Mills, is delivering rock cod to the C. Stagnaro Fishing Corp. Capt. Cottardo Ghio on the *Sonny Boy* and Capt. Robert Cruse on the *Sharon* are selling their catches to Santa Cruz Fisheries, while Capt. Victor Ghio on the *Katherina G.* and Capt. Freeman Arbo on the *Anna Alma* fish for Stagnaro Bros. Seafood Co.

Named Head of Fish Canners Assoc.

Harold P. Requa, Jr. of Westgate-California Tuna Packing Co., San Pedro, has been named president of the California Fish Canners Assoc., succeeding William C. Morehead of Pan-Pacific Fisheries, Inc., Terminal Island.

Other officers named at the annual meeting were Joseph M. Mardesich, vice-president; and Gilbert C. Van Camp, Jr., secretary-treasurer.

San Diego Fleet Does Well

Figures on seafood deliveries by San Diego's fishing fleet show 75,000 tons to the Van Camp, California-Westgate and Star Kist canneries. This was an increase of more than 30,000 tons over 1955. The year was one of the best the fishing fleet has experienced.

Washington Trawlers Making Huge Petrale Sole Catches

About 25 trawlers, most of them from Seattle, have been making fabulous hauls of petrale sole from the Estaban Deep off the coast of Vancouver Island. There is a reason for their tremendous catches and long working hours, however, for on February 1 the season for petrale sole will be cut off by a catch-limit of 6,000 pounds per boat. The boats have been bringing in catches that ran as high as 100,000 pounds, which at 10¢ a pound can count up to about $10,000 for a ten-day run for a four-man crew.

The Estaban Deep was discovered in 1953, and is estimated to be from 170 to 250 fathoms deep. It was proved that the petrale sole return here to spawn year after year. The fishermen soon followed, with catches growing from a quarter-million pounds that year to over a million pounds in 1956.

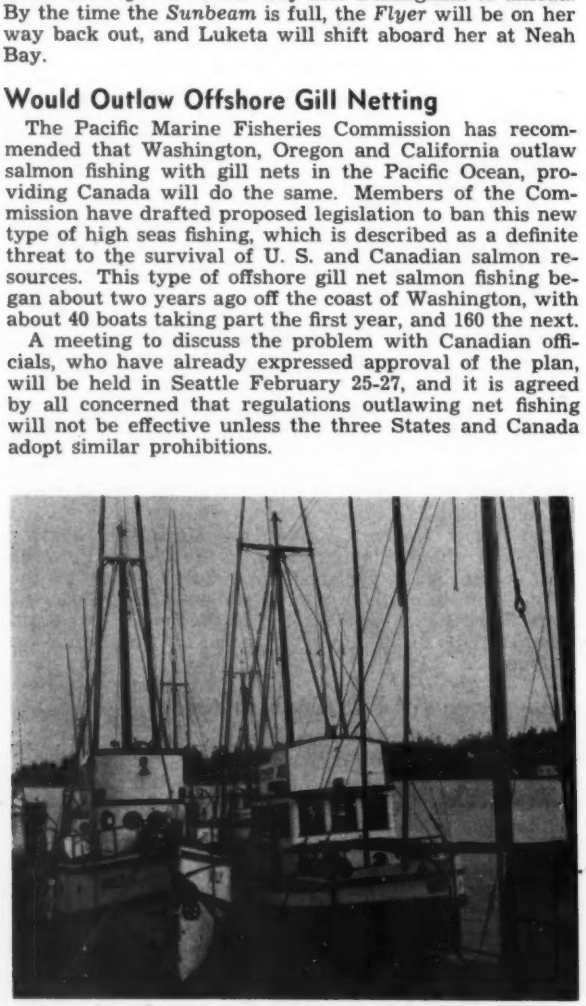
Outstanding among the group fishing this area recently is Dan Luketa, who has been skippering two boats and also has a third one in the race. The three boats in his fleet are the *Sunbeam, Paul I* and *Western Flyer,* and are credited with landing over 400,000 pounds this year.

Rudy Schultz masters the *Paul I,* while Luketa skips between the *Sunbeam* and the *Western Flyer.* He manages this by taking the *Sunbeam* out to the fishing grounds while the *Flyer* is on her way into Bellingham to unload. By the time the *Sunbeam* is full, the *Flyer* will be on her way back out, and Luketa will shift aboard her at Neah Bay.

Would Outlaw Offshore Gill Netting

The Pacific Marine Fisheries Commission has recommended that Washington, Oregon and California outlaw salmon fishing with gill nets in the Pacific Ocean, providing Canada will do the same. Members of the Commission have drafted proposed legislation to ban this new type of high seas fishing, which is described as a definite threat to the survival of U. S. and Canadian salmon resources. This type of offshore gill net salmon fishing began about two years ago off the coast of Washington, with about 40 boats taking part the first year, and 160 the next.

A meeting to discuss the problem with Canadian officials, who have already expressed approval of the plan, will be held in Seattle February 25-27, and it is agreed by all concerned that regulations outlawing net fishing will not be effective unless the three States and Canada adopt similar prohibitions.



Combination trollers and crab boats at Charleston, Oregon.

It is argued that unless such action is taken, the Japanese may consider such fishing a breach of the North Pacific fishing treaty, which bars them from invading U. S. and Canadian fishing grounds, and would act accordingly.

Marketing Association Re-elects Kuljis

"Big Nick" Kuljis has been elected to serve his twelfth year as secretary-treasurer of the Fishermen's Marketing Association of Washington. Kuljis estimates that the Association represents 50 trawlers and 200 men. At the peak of the season that is about doubled, with Association members last year catching 19 million pounds of bottom fish.

Oystermen Plagued by Pulp Mill Pollution

The Pacific oyster growers in the States of Washington and Oregon have experienced severe losses of oysters in certain bays, which they attribute to pollution from pulp mill wastes. At the present time there are about 21 pulp plants in the coastal area of the State of Washington, and more are planned.

The Pacific Coast Oyster Growers Association has requested funds from the Fish and Wildlife Service to carry on a research project to determine the effect of pulp mill wastes on larvae and adults of both the small native oyster and the large Japanese import. So far this project has not been approved, and the Association is now trying to ascertain if such a study can be done by the U. S. Public Health Service.

Part of Columbia River Closed to Fishing

The Washington State Department of Fisheries, in conjunction with the Oregon State Fish Commission, has announced the closure of the Columbia River above Bonneville Dam to commercial fishing this year. Closure became effective February 1.

The unusual ruling was brought about after exhaustive study and numerous public hearings conducted by biologists. Its purpose is to permit greater escapement of salmon and steelhead to the spawning grounds.

All other rules adopted by the two commissions remain the same as last year, except for the following, which apply to the Columbia fishery from five miles below Bonneville to the mouth of the river: A split Fall season having the effect of an 11-day closure; an additional 24-hour closure, with fishermen being allowed to fish only three days a week instead of four; removal of mesh limitations on bluebacks, which are now more abundant; and re-establishment of a regulation limiting the length of nets to 250 fathoms.

New Head of Vessel Owners Association

Capt. Jacob Knutsne of Seattle has been elected to succeed Capt. Haakon Selvar of Port Blakely as president of the Fishing Vessel Owners Assoc. Other new officers are Capt. Harold Hanson, vice-president; and Capt. Arvid Svendsen, secretary. Trustees are Captains Berner Remmen, Sig Hegge, Ole Jostol, Rangvald Selset and Ralph Ekron. Harold E. Lokken has managed the Association since 1924.

Seek to Raise Crab and Tuna Tariffs

Washington Congressional leaders have promised to help the newly formed Pacific Coast Crab Assoc. in getting Pres. Eisenhower to raise the tariff on imported Japanese crab and tuna. Ray Webb, Westport organizer, said that Senator Warren G. Magnuson had told him the problem would receive immediate consideration. Favorable comments were also received from Senator Henry Jackson and Rep. Don Magnuson.

Webb added that he would ask the Bay Center, Ilwaco crab fishermen to join the group to seek legislative support at Olympia also.

Value of Year's Fish Take

The wholesale value of Washington's 1956 fish take has been estimated at 45 million dollars. Landings were esti-

Fishing boats at Seattle, Wash.

mated at virtually the same as the previous year—148,500,000 lbs. Total salmon catch was down because of a poor chum season and the even-year lack of pinks. Salmon fishermen received $9,869,000 for their year's efforts.

Seattle Otter Trawl Catch Shows Gain

The Seattle otter trawl fleet did well in January, landing 1,581,600 lbs., which was about double the catch made in the previous month and in January, 1956. Forty-three trips were landed. Petrale sole was mainly responsible for the increased catch, landings of this variety having totalled 608,300 lbs., as compared to only 39,600 lbs. in the same month of last year.

Oregon Fish Commission to Study Yaquina Bay Crabs

Movements of dungeness crabs in Yaquina Bay will be scrutinized by shellfish biologists of the Oregon Fish Commission in a study started last month. Of primary interest to the researchers is discovery of a suitable pattern for release of tagged crabs that can be applied to provide more extensive information in future larger-scale crab studies. Crabs tagged through the right corner of the upper shell with plastic Peterson discs will be released at ten different locations in Yaquina Bay.

For the next five months the investigators will be "fishing" experimental crab pots at various points in the bay to trace the movements of the tagged crustaceans. From this study it may be possible to estimate the total number of crabs in Yaquina Bay.

The study may also give some indication of what happens to crabs after increased flows of fresh water into bays during freshets. It is believed that during influxes of fresh water crabs burrow into mud on the bay bottom where salinities are more to their liking.

Albacore Catch Totals over 3 Million Pounds

The return of albacore tuna in commercial quantities to waters off the Oregon coast in 1956 resulted in a 3,500,000-lb. harvest landed at Oregon ports. Two oceanographic research vessels, the *J. N. Cobb* and the *Brown Bear*, first confirmed the presence of albacore in northwest offshore waters.

Stimulated by these catches, commercial vessels joined in the search for fishable concentrations of albacore. In late August the quarry was located some 70 miles off Newport, and commercial harvesting of albacore tuna was resumed after a four-year "vacation".

Heavy catches continued through September until a drop in price caused many boats to abandon albacore fishing. By early October, landings of fish tapered off and the bonanza was over—at least for 1956.

Whether or not albacore will return to Oregon offshore waters this year is the jackpot question. Fisheries scientists who have worked on the mystery are reluctant to give explanations of the albacore's meanderings. There is some evidence that water temperature has an influence on albacore migration.

Opposed to New Fish Receiving Station

Fish buyers and processors in Coos Bay who reacted unfavorably to the establishment of a $200,000 fish receiving station in the Charleston Small Boat Basin have been told by the Port of Coos Bay Commissioners they will have an opportunity to present their objections at a public hearing, scheduled for February 11. The Fishermen's Cooperative of Seattle, Wash. is the organization which would operate the fish receiving station.

The local buyers raised objections primarily on the basis that it would be unfair and subsidized competition, because the business would pay no Federal or State income taxes, or no real property tax because of operating on ground owned by the Port Commission, a public body.

Charles Feller, representing the local buyers, stated that he owns, adjacent to the Small Boat Basin, land on which he had been planning to build a receiving station and a restaurant operation.

Sails on Oceanographic Research Trip

Seven scientists from the Fisheries Research Board of Canada sailed January 21 into the Pacific with a boatload of expensive instruments—and 4,000 beverage bottles. The bottles may prove just as valuable as the instruments to the oceanographers aboard the *Oshawa*, equipped and assigned by the Canadian Navy for oceanographic work. The bottles will be used in tracing ocean currents, and will contain a card stating that $1 will be paid for every card returned with information as to where it was picked up.

The *Oshawa* will steam more than 6,000 miles in a trip that will take it near the Aleutian Islands and Alaska. The trip is being carried out with the cooperation of the United States and Japan for the purpose of gathering information relative to the fishing industry, and with the ultimate aim of working out a cooperative agreement among the three countries.

Silver Salmon Egg-Takes

With silver salmon spawning well past the halfway mark at eight Oregon Fish Commission hatcheries, more

Twin Disc offers boa... complete lin...

With last year's introduction of the popular Model MG-511, Twin Disc Clutch Company currently offers a variety of marine reverse and reduction gears to meet virtually all requirements of medium size workboats and fishing vessels—as well as to match the horsepower and rpm ratings of the widest range of marine engines.

The range of the Twin Disc Marine Gear line extends from 40 to 340 horsepower; for engines operating at speeds from 600 to 2500 rpm. Various reduction ratios are available to 4.4:1.

The current line of Twin Disc Marine Gears incorporates the same qualities of practical engineering, precision construction, skilled workmanship, durable materials and ample safety factors that have been associated with the Twin Disc name for more than 25 years in the marine industry. At the same time, all the latest advances in design and manufacturing techniques are utilized throughout the line. These combined features over the years have made Twin Disc Marine Gears as widely demanded on the West Coast as on the East . . . on the Gulf as well as on the inland waterways . . . a reputation *not enjoyed to this extent by any other manufacturer producing marine gears of similar size.*

Using two Atlas 35X Engines equipped with Twin Disc MGH-340 Marine Gears, the O-KAN is a Dravo-built towboat owned by Point Towing Company, Pt. Pleasant, W. Va. One of this firm's towboats, built to the same specifications as the O-KAN, had its propeller stopped by a log—but the MGH-340's fluid drive arrangement prevented any damage to the engine.

MGH-340: 185 to 340 hp

One of the most popular heavy-duty marine gears of its kind, the Twin Disc MGH-340 is for engines in the 300-hp range, with a top capacity of 340 continuous hp at 1500 rpm.

This model incorporates a Twin Disc Fluid Coupling Drive, thus eliminating any mechanical connection between engine and gear train. The engine flywheel drives the fluid coupling's impeller and the coupling's fluid transmits the power. Shocks, pulsations, torsional vibrations and gear chatter are absorbed by the fluid connection.

All pinions and reverse idlers are carburized, hardened and have generated helical ground tooth profiles. Clutch shaft and countershaft are of heat-treated ground alloy steel. Antifriction bearings are used throughout.

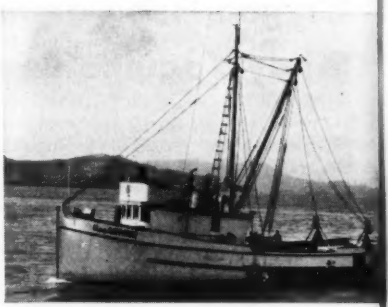
MG-302: 150 to 275 hp

The Twin Disc MG-302 Marine Gear has a maximum continuous input rating of 275 hp at 1500 rpm. In design and construction, it is identical to the MGH-340 with two exceptions: (1) it does not include the hydraulic coupling drive; and (2) incorporates Twin Disc's Rubber Block Drive, an ever-popular, trouble-free drive that permits normal misalignment occurring after proper installation and has some vibration-absorbing qualities. With Rubber Block Drive, the MG-302 has a flange-to-flange length of 40 inches.

MG-511: 100 to 240 hp

Designed and built for today's higher speed, higher output marine engines, the MG-511 is the latest addition to the Twin Disc Marine Gear line. Its maximum continuous rating is 240 hp at 2100 rpm. It features oil-actuated, oil-cooled multiple-plate clutches; positive lubrication and cooling from an oversize 10-gpm gear-type pump; straddle-mounted gears on anti-friction bearings; finger-tip control from a single selector valve. Twin Disc Rubber Block Drive is standard equipment.

The Twin Disc MG-511 Marine Gear is built for full input horsepower in either forward or reverse. With a flange-to-flange length of 17⅞ inches, it is ideal where engine room space is critical. All components are easily accessible for maintenance.



This West Coast fishing vessel the *MacArthur* is based in San Francisco Bay and is owned by Reidar Enge and G. J. Wandtke. The propulsion engine is a Cat D337 Series F and the marine gear is a Twin Disc MG-511.

MG-200 and MG-201: 90 to 225 hp

The MG-200 and MG-201 Marine Gears are of the same basic design and construction except that the MG-201 has a heavier clutch action to give greater torque capacity at slower engine speeds. The MG-200 has a maximum continuous rating of 225 hp at 1500 rpm and the MG-201 has a maximum continuous rating of 180 hp at 1000 rpm.

...owners a ...of Marine Gears

The new *Sugar Daddy*, part of Versaggi Brothers' 31-vessel fleet of shrimp trawlers operating in the Gulf. This vessel uses a Caterpillar D342 Engine and an MG-200 Marine Gear.

Both marine gears have a positive spring-loaded over-center clutch action which automatically compensates for friction surface wear. No adjustment is required. Clutch action is counter-balanced to clamp tighter as engine speed is increased and horsepower input becomes correspondingly greater.

Bearings are oversized and are of the anti-friction type for long-lasting life. The countershaft rear bearing is capable of taking full propeller thrust, thus eliminating the need for a thrust bearing on the tail shaft. Pinions, forward gears and reverse idlers are carburized, hardened and have generated ground profiles.

MG-165 and MG-166: 125 to 195 hp

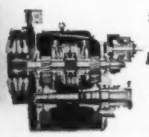
Basically the MG-165 and MG-166 are similar in design and construction to the MG-200 and MG-201, the primary difference being a matter of hp and rpm ratings. The maximum continuous ratings for the MG-165 and MG-166 are, respectively, 185 hp at 2100 rpm and 195 hp at 2100 rpm. The MG-166 offers the higher reduction ratio—4.38:1. Both marine gears cover a wide spread of input speeds, as noted in the specifications given below.

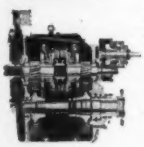
MG-61: 40 to 110 hp

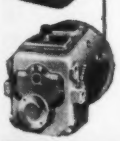
From 40 hp to 110, from 900 rpm to 2500, the Twin Disc Model MG-61 meets a truly wide range of marine applications. Its design combines a heavy-duty duplex clutch for forward and reverse, with integral reduction gear, permitting use of higher speed engines with larger and more efficient slow-speed propellers.

The duplex clutch is of the over-center, spring-loaded design, which eliminates the need for adjusting friction plates . . . is effectively counter-balanced for high-speed operation. Heavy-duty oversize bearings are used throughout for long life and maximum safety.

TWIN DISC MARINE GEAR SPECIFICATIONS



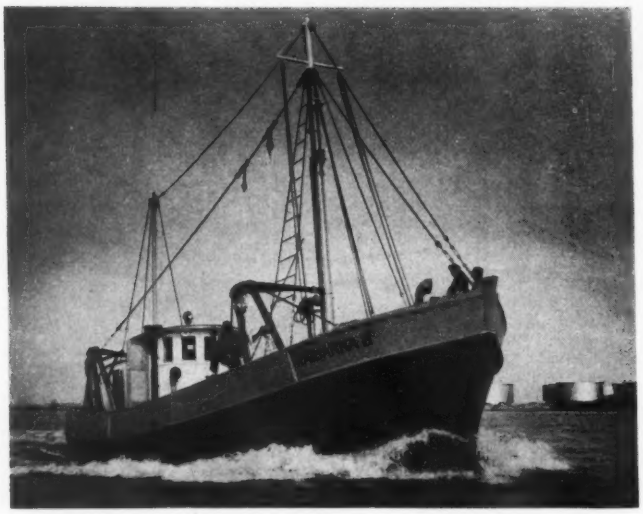




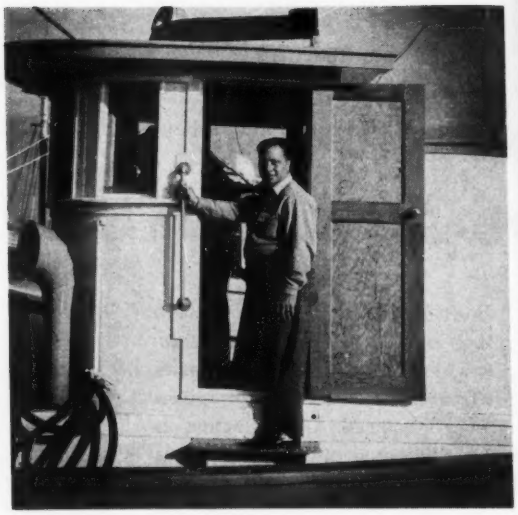
MODEL	Maximum continuous hp and rpm	Forward reduction ratio	Reverse reduction ratio	SAE housing	Approx. net dry wt., lbs.	Optional equipment
MGH-340	340 at 1500	3.92:1 2.93:1 1.90:1	3.46:1 2.77:1 1.82:1	No. 0 or No. 00	3200	Power take-off; capacity to 35 hp; shaft rpm 50% of engine rpm
MG-302	275 at 1500	3.92:1 2.93:1 1.90:1	3.46:1 2.77:1 1.82:1	No. 0	2850	(Same as above)
MG-511	240 at 2100	4.40:1 3.00:1 2.00:1	(Same as forward ratio)	No. 1	950	Trolling valve for reduced propeller rpm
MG-200	225 at 1500	2.96:1 1.96:1	3.00:1 2.00:1	No. 0	1370	
MG-201	180 at 1000	2.96:1 1.96:1	3.00:1 2.00:1	No. 0	1590	
MG-166	195 at 2100	4.38:1	3.80:1	No. 1	822	
MG-165	185 at 2100	3.00:1 1.96:1	(Same as forward ratio)	No. 1	723 620	
MG-61	110 at 2500	3.00:1 1.96:1	3.00:1 2.00:1	No. 2	460 435	

TWIN DISC
TWIN DISC
Marine Gears

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois



"Marianna II", new 55' dragger designed especially for Northern waters, leaves the Morehead City (N. C.) Shipbuilding Corp. for Gloucester, Mass.



Capt. Cosimo Parco of Gloucester, Mass., owner-skipper, stands at the wheelhouse door of his new dragger "Marianna II".

than 8,000,000 eggs have been collected this Fall. Particularly encouraging is the collection of 2,000,000 silver salmon eggs at the Sandy River hatchery on Cedar Creek.

Big Creek salmon hatchery, east of Astoria, has also collected 2,000,000 silver salmon eggs this Fall, and the Coos River hatchery is not far behind, with 1,500,000 eggs obtained.

Emergency Fishway Installed

An emergency fish lift over a falls on the north fork of Scappoose Creek was completed recently by an Oregon Fish Commission engineering crew. A large number of silver salmon bound for spawning areas in upper north Scappoose Creek had been observed jumping at the falls, apparently blocked by the obstruction. The fish were considered too "ripe" to be trapped and transported above the barrier, so a temporary fishway had to be devised.

Marked Steelhead Return to Big Creek

A considerable number of fin-marked steelhead have returned this Winter to Big Creek, tributary of the lower Columbia River. Last month at the Big Creek salmon hatchery, 101 out of 120 big steelhead counted through a trap at the station were observed to have missing dorsal and left ventral fins.

The marked fish are returns from a Fish Commission liberation of 46,000 steelhead in late 1954. The fish averaged 30 to the pound when released.

Electronic Fish Counter Being Used

The first extended field trial of a transistorized electronic fish counter in the United States was begun in Oregon recently. The device was installed in a fishway at Bonnie Falls on the north fork of Scappoose Creek. Use of the counter will provide the Fish & Wildlife Service with detailed information on extended field performance of the device, including maintenance costs.

Fish movement is channeled through two plastic "tunnels" that lie on the bottom of the uppermost pool of the fishway. Within each tunnel, two distinct electrical fields of low voltage are created electronically. As a fish moves through one of the tunnels, it causes more electricity to flow. Then the increased flow trips a series of electronic relays. These relays actuate a "logic device" that records passage of the fish, either upstream or downstream, depending upon the sequence in which the tunnel relays are tripped.

Small fish can be eliminated from total counts by setting the device to record only fish above a certain size.

Southern-Built "Marianna II" Joins Gloucester Fleet

55-footer will go dragging for groundfish and whiting

THE second North Carolina-built dragger to join the Gloucester, Mass. fleet within a year is the 55' *Marianna II*, owned by Capt. Cosimo Parco. The vessel was constructed by the Morehead City (N. C.) Shipbuilding Corp., and is the newest of their "D series"—boats designed and built especially for fishing in the North Atlantic. The other Hatteras Trawler owned in Gloucester is the *Golden Dawn*, Capt. Phil Bodoni, who at present is fishing out of Newport, R. I.

The *Marianna II* will replace the 47' *Eleanor Mae*, owned by the Parcos. Capt. Parco, his three sons, Joseph, Anthony and Salvatore, will man the *Marianna II*, along with two other crewmen. Capt. Parco came to this country at the age of 16, and has been fishing ever since—for a total of 37 years. His first boat, the *Marianna*, was built in 1927.

The *Marianna II* will be used for whiting and groundfish dragging, depending on the season. The new vessel has a 16½' beam and a 6'9" draft, and is painted green and grey. She was christened by Mrs. Cosimo Parco at the Morehead City Shipbuilding Corporation yard, after being blessed by Father Higgins of Morehead City.

The new dragger is powered with a 6-110 General Motors Diesel which has a 3.75:1 reduction gear. There is a 44" x 34" Southern propeller, and the propeller shaft is of 3" Monel metal. The engine room also contains two fuel tanks with 800-gallon capacity each; a 3,000-watt Onan Diesel generating set, with a 1¼" Jabsco pump with clutch on the tail shaft. The power take-off on the front of the engine operates another 1¼" Jabsco pump with clutch for bilge pumping. There are four Surrette batteries of eight volts each.

The pilot house contains the instrument panel, a 5" compass, an electric horn and a Mile-Ray searchlight.

Layout of Boat

Located in the lazarette, which has ample storage space, is the new drum type steering mechanism, a feature

(Continued on bottom of next page)

Great Lakes Ice Fishing Yields Good Smelt Hauls

Operating with nets through holes in the ice, Great Lakes commercial fishermen have been producing some impressive hauls of lake smelt, mostly in the Bays de Noc area of northern Green Bay. The little fish were in good commercial abundance, and this month shows some promising signs on Great Lakes ice for the Wintertime netters.

Production of lake trout and whitefish from Lake Superior has been light due to cold weather conditions. However, some of the herring netters, operating through the ice, were making good takes of lake herring in the eastern end of the lake.

On Lake Michigan the production of smelt and herring increased. Bullheads, carp, and suckers were in good production in both Lakes Michigan and Huron. Saginaw Bay ice fishermen were producing fair catches of lake herring, suckers and perch.

Smelt takes through the ice from Lake Huron have been good, but there were not too many jumbos among the catches.

This month ice-fishing shacks were popping up on Bay de Noc ice like mushrooms after a rain. An estimated thousand fishermen or more will operate on Green Bay ice this season, including the casual as well as the commercial netters.

Though some of the fishing tugs were breaking out of harbors through icy lanes to operate in open water, the majority of the Great Lakes fishing fleets are laid up for the Winter. Much repairing, overhauling and replacement of equipment and gear is taking place.

Fishing in Southern Waters

Several fishermen from Michigan have gone South to try their luck at fishing there. Among them are: William Lasanen of Big Traverse Bay, who owns the *Gulf Victory* and is operating out of Freeport, Texas; and Jerry and Sonny Haataja, Norman Jamsen, Carl and Irving Tormala, all from Copper Harbor, who are operating out of Fort Myers Beach, Fla. Norman Jamsen owns the trawler *Janet Lee* and the two Tormalas own the trawlers *Two Brothers* and *Miss Queenie*. They are engaged in shrimping, and report that it is both interesting and profitable.

More Funds Sought to Fight Lamprey

Congress was asked on January 16 by President Eisenhower for $969,100 to continue a program to rid the Great Lakes of the sea lamprey. Congress appropriated $600,000 for the control program in the fiscal year ending June 30.

The control program will take several years to become effective. Thus far all streams in Lake Superior have been under control for three years, while Canada has had the streams from her shores under control for only one year. During the next year, all streams entering Lakes Michigan and Huron should be under control.

Change to Herring and Chub Fishing

There has been a big change in the activities of commercial fishermen in Lake Michigan in recent years. Trout and whitefish catches were big until the lamprey began its attacks. Now commercial fishermen have changed to chubs and herring.

One company operating out of Cedar Grove, Wis., D. Smies & Sons, is very active in herring fishing. The firm is headed by Jannes Smies, and recently reported a catch of about 2,000 herring. A 35-foot square trap of netting is spread a mile or so from the shore of the lake. A running net is set from the trap to the shore, by which flanking nets funnel the fish into the trap.

Rough Fish Removed from Lakes

Rough fish removal operations by the Wisconsin Conservation Department were quite extensive in the Horicon Division during 1956.

Rough fish taken from Beaver Dam Lake totaled 189,170 lbs.; from Fox Lake, 42,700 lbs.; Big Green Lake, 152,610 lbs.; Lake Winnebago, 195,000 lbs.; Lake Puckaway, 271,300 lbs.; and the Rock River, 97,390 lbs. The fish taken were mostly carp, and these figures do not include such operations as the Lake Winnebago sheepshead removal program.

Speaks on Lamprey Effect

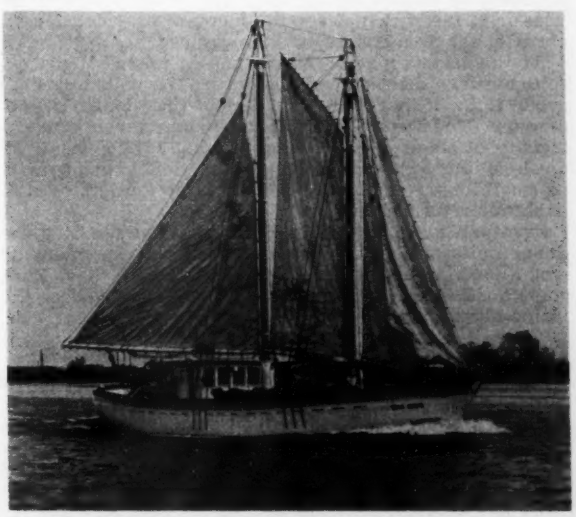
Allen Smith of Smith Brothers, Port Washington, Wis., a commercial fishing firm, recently spoke at a meeting of the Whitefish Bay Club, Whitefish Bay, on the effect of the sea lamprey on Lake Michigan fish. Commercial fishermen of this area are becoming increasingly aware of the importance of educating the public on the need to combat the lamprey.

Fish Management Experts Discuss Lamprey

Some 130 fish management experts from Wisconsin, Michigan and Minnesota met at Superior, Wis. on January 21 and 22 for the 13th annual Tri-State Fisheries Conference.

Gerald Cooper of the Fish & Wildlife Service told the conference that recent tests have indicated that sea lamprey larvae remain in stream beds as long as 10 years, instead of the four or five years fisheries men had considered the customary period.

Leo Erkkila, also of the Fish and Wildlife Service, suggested that heavy stocking of lake trout might be one means of combatting the loss of trout due to lamprey attacks.



SNAPPER SCHOONER "STAR QUEEN" is the largest boat in the fleet of Star Fish and Oyster Co., Mobile, Ala. She is 78' long and has a 21' beam. The vessel is powered by a 165 hp. General Motors Diesel, was built by Krebs Shipyard of Pascagoula, Miss., and is skippered by Capt. Al Holgerson of British Columbia.

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which makes for easier steering and handling. The captain's quarters contain a bunk with drawers underneath, a clothes locker, a chart table, a 76-B Apelco radiotelephone and a Loran unit.

In the forepeak are four bunks, a mess table, seats and lockers, a Model 212 Shipmate stove, a 300-gallon freshwater tank, a sink and galley pump, and storage space for food and accessories. Aft of the starboard fuel tank there is an additional bunk for a member of the crew.

On deck is a Model 1353 Hathaway hoist, with 600 fathoms of 9/16" wire tow cable. The two gallows frames are located on the starboard side. On the port side of the turtleback there is large locker space for nets and other gear.

The fish hold on the new dragger is equally divided into 12 bins, with a pen board for each bin. On deck, over the bins, are eight 12" galvanized deck plates.

Capt. William Howell, of Southwest Harbor, Maine, owner of the scallop dragger "Rhode Island" which lands her catches at Rockland, Maine.

Maine Lobstermen To Be Polled On Proposed Measure Increase

A poll of Maine lobstermen will be taken soon to see if they favor an increase in the State lobster measure. President Leslie Dyer of the Maine Lobstermen's Association announced the poll at a meeting with Massachusetts Director of Marine Fisheries Frederick Wilbour, and a group of Knox County lobster dealers. The Maine dealers also met in Boston with Massachusetts dealers, resulting in a joint committee to consider common problems.

Misrepresentation of imported sea products by use of the name "lobster" also was discussed by the Maine and Massachusetts lobster dealers. The Maine group seeks support from Massachusetts of Sen. Frederick G. Payne's bill which would outlaw use of the word "lobster" on such shellfish as African, Australian, Danish and Chilean products being increasingly imported into this country.

Dyer said the poll on legal lobster size will be in two parts—to see if the fishermen favor an increase of one-sixteenth of an inch on the short end of the Maine measure; or to see if they favor the increase provided Massachusetts adopts a double gauge measure.

At the same time the Maine poll is taken, Massachusetts lobster fishermen and dealers will be polled by their group to see if that State might adopt the "double gauge" measure. The Massachusetts measure now covers only the legality of small lobsters—those under 3 3/16" being illegal. Maine, on the other hand, has a double gauge, with its small lobster being 3 2/16", and large lobsters over 5" liable for return to the sea.

Eventual goal of the joint lobster committee is a national uniform lobster measure. Mr. Wilbour plans to seek a meeting in Boston of representatives of New York and Rhode Island lobstermen and dealers, as well as the Maine-Massachusetts groups.

To Start Operating Birds Eye Plant in March

National Sea Products, Ltd. of Halifax, successor to Birds Eye Division in Rockland, will not start operations prior to March 1, according to W. Stanley Lee, general manager of the firm. During this month details as to employment of fishermen and shore workers will be worked out, and everything should be ready to go the day after Birds Eye relinquishes management on February 28.

It is reported that two trawlers will be outfitted to catch groundfish, such as cod and haddock. They are expected to be sent out on an experiment basis, while the remaining boats may be expected to continue redfishing as in past years.

Launch New Sardine Advertising Campaign

A spot radio campaign, utilizing more than 100 stations in ten Southern States, will feature the Maine Sardine Council's promotional activities during the coming Lenten period. The area selected for coverage includes Virginia, North and South Carolina, Georgia, Florida, Alabama, Texas, Louisiana, Mississippi and Tennessee.

Seiners Drop Proposed Change in Law

A group of 24 Washington County weirmen agreed to join forces with the Coastal Seiners and Weirmen's Association recently, after Association officials voted to drop their recommendation to change the 2000 foot safe fishing area from weirs. The Association previously had voted to recommend that fishing within 1000 feet of a weir be allowed.

This recommendation became controversial when the objections of 73 Washington County weirmen came to light in a petition handed the Association. The weirmen objected to the change on the grounds that fishing as close to a weir as 1000 feet would hurt the weir fishing. It would tend to close the mouth of the weir, cutting down the fish intake, they said.

In agreeing to drop the recommendation, the executive board of the Association accepted the appointment of Alger W. Pike of Lubec and Alfred Beal of Beals Island as members of the legislative committee and executive board.

Tupper Resigns as Fisheries Commissioner

Stanley R. Tupper, Sea & Shore Fisheries Commissioner for the past three and one-half years, last month sent to the Governor his letter of resignation. He will resume law practice in Boothbay Harbor.

Three applicants have been mentioned for consideration as a replacement, namely William Cook, Tenants Harbor, former State Senator Cleveland Sleeper, Jr., and Chief Warden Ronald W. Green of Rockland.

Legislation on Minimum Lobster Size

Senator Frederick G. Payne announced recently that he is introducing legislation to impose a minimum size on lobsters which may be shipped in interstate commerce or imported into the United States from foreign countries. The legislation also would define the word "lobster" for purposes of the Federal Food and Drug Act.

Payne said virtually every lobster producing State has a minimum size limit on lobsters taken or possessed within the State, and his proposal would make it illegal to ship in interstate commerce lobsters that are illegal under the laws of the State in which they are taken or possessed. If there is no State law governing the size of lobsters, the bill would establish a minimum size of 3 1/16 inches measured along the center of the body shell.

The measure would also make illegal the importing from a foreign nation of lobsters that would be illegal under the law of the State into which they are being imported, or in the absence of State laws, lobsters less than the minimum size established by the bill.

Payne's bill would provide that the word "lobster" could be used as a label only on the species Homarus Americanus, which is the lobster common to the Atlantic coastal waters of the United States northward from Cape Hatteras into Canada. This provision is designed to assist lobster fishermen in meeting unfair foreign competition.

Seek to Develop New Sardine Products

A program of new product development is being launched by the Maine Sardine Council at its recently established Bangor Research & Quality Control Laboratory. A full-time expert will be engaged to experiment on different flavors, oils and sauces for the existing type of sardine pack, as well as to develop entirely new sardine products.

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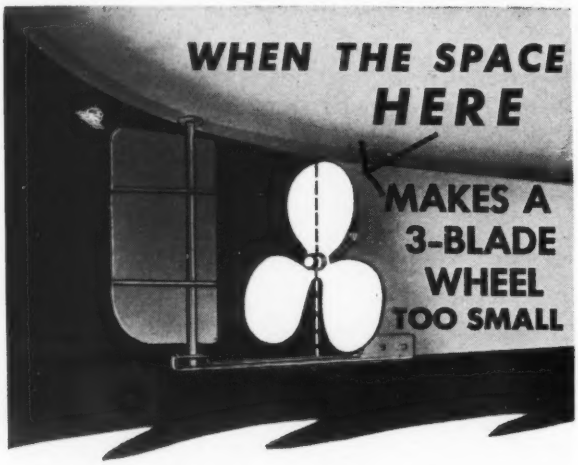

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Storage of Pacific Live Crabs In Refrigerated Sea Water

A recent development in the fishing industry has been the practice of transporting crabs alive from distant fishing grounds to markets where there is a continuous demand for fresh crab meat. For example, a Seattle firm has successfully delivered live crabs from the remote Shumagin Islands in Alaska to its plant in Seattle.

The method used for holding the crabs on the fishing vessels consists of storing the crabs either in large tanks or more commonly in the flooded hold. Fresh sea water from outboard connections is pumped continuously through the crabs and back overboard at the rate of about 5,000 gallons per minute. Since live crabs, like lobsters, are very sensitive to changes in the temperature, salinity, and oxygen content of sea water, great care must be taken to avoid abrupt changes in any of these factors. This means that boats carrying cargoes of live crabs must use discretion in pumping sea water while in certain inlets, river mouths, and harbors, if they are to deliver their catch alive. Processors will not accept dead crabs.

Experiments carried out by the Vancouver, B. C., Technological Station of the Fisheries Research Board of Canada were made on a vessel in which had been installed refrigerated sea-water holding facilities. The equipment included large holding tanks and adequate pumping facilities. The fact that the vessel was equipped to refrigerate sea water in her tanks suggested a different set of holding conditions. At temperatures near 32° F. crabs become virtually dormant; their movements cease and their oxygen requirements become very low. It was decided to further examine this phenomenon to determine the practicality of prolonged holding at a low temperature, oxygen being provided by aeration. It was hoped by this means to eliminate the necessity of continuously changing the water in the tanks by providing a sea-water "charge" of constant temperature, salinity and oxygen content.

Preliminary Tests Encouraging

Preliminary tests were carried out at the Vancouver station, using a small refrigerated sea-water tank which was provided with continuous circulation and aeration. Live crabs were placed in the tank at room temperature and the water was then slowly cooled to the desired temperature. It was observed that the crabs became very active at about 45° F., and then progressively less active as the temperature was lowered to approximately 35° F., at which point they became dormant. The crabs were held under these conditions and examined daily for signs of life. In these tests the crabs survived for 12 days at 35° F. without changing the sea water. At the completion of these tests the surviving crabs were cooked in the usual manner. The meat was then examined and judged satisfactory by the Research Board's standards.

A test under commercial conditions was carried out next. In this test 1,400 live crabs were transported from Tofino on the west coast of Vancouver Island to Vancouver Harbor in a tank containing sea water cooled to 38° F. and continuously aerated. The crabs were held in the tank for five days before being unloaded; a mortality of one per cent was experienced. The crabs were cooked and picked, the crab meat being distributed on the local fresh fish market.

The Canadian Research Board's report on the tests says that they cannot be considered conclusive, but show promise for this means of transporting crabs. It has been demonstrated that most of the crabs will survive under these conditions for five days and probably longer. However, it also has been noted that the crabs do not fully revive if placed in warmer water after spending several days in the tank. This indicates that they have suffered some injury due to any of several factors, including low temperature, oxygen deficiency or the accumulation of a toxic substance in the sea water.

Rhode Island Shellfishermen Hampered by Cold Weather

An acute shortage of shellfish, caused by the adverse weather last month, resulted in a rise in the price paid to diggers from 10 to 12 cents a pound for littlenecks and from 4 to 4½ cents a pound for big chowder quahaugs.

The Blount Seafood Corp. of Warren, which deals in canned products, was able to get a sufficient supply from New Bedford and the Cape to keep operating an average of three days a week. The quahaugs they use are taken by big dredge boats in deep water, and the weather is not a serious factor. The fresh market quahaugs and littlenecks, however, are taken mostly by hand tongers in shallow waters.

Normally there are about 300 shellfishermen in Bristol County. When the Barrington area was opened up there were between 300 and 500 boats operating, but on the 22nd of last month only seven boats ventured out in the Barrington area.

At Bristol, the quahauging industry was at a complete halt as cold weather clamped a paralyzing grip on water-front activities. A few of the more hardy quahaugers attempted to dig along the shore at low tide, but gave up when they were able to uncover only a few quarts.

The Coast Guard was called upon on January 17 to free 21 shellfish boats which were frozen in six to eight inches of ice in East Greenwich Cove. Another 30 trapped skiffs were freed on the 18th.

Striped Bass Bill

Twelve Senators recently cast a striped bass bill into the Rhode Island Assembly. The bill eddied into a legislative current that swept it into the Fisheries Committee, from which in recent years somewhat similar legislation has failed to reappear.

Like a bill already introduced in the House of Representatives, the Senate measure would restrict the taking of striped bass in Rhode Island waters to use of the hook and line, spear or fish traps. It provides that at all fish traps, between Sept. 1 and Dec. 1 of each year, there shall be no obstruction, except the trap anchor warp of the leader, within 150 feet from the mean high water mark on shore.

Seek to Power Dredge

Rhode Island's "East of the Bay" quahaug dredgers last month appeared at the State House to make their annual attempt to convince the General Assembly that they should be allowed to work their power dredges in the west passage of Narragansett Bay. This time the dredgers are asking for permission to drop their dredges in an area near Davisville, where the Navy soon is to suck sand for expansion of a pier.

The dredgers claim that the Navy sand sucking operation will destroy thousands of bushels of quahaugs and that the only way to get them out quickly is to dredge them.

The quahaug dredgers' group was led by F. Nelson Blount of Barrington, owner of Blount Seafood; Francis B. Manchester, a Tiverton quahaug dealer; and State Sen. Frank A. McMurrough, of Tiverton.

Want Breachway Widened

A recommendation was made to the General Assembly last month by John L. Rego, State Director of Agriculture and Conservation, that if Charlestown and Green Hill Ponds in South County are to continue as one of the best natural oyster areas in the Northeast, the State will have to spend money building a breachway and a bridge.

Charlestown Pond has a salinity of 25 parts per thousand. Adjacent Green Hill Pond has a salinity of 15 parts a thousand. Since a salinity of 20 parts per thousand is the minimum considered desirable for oyster culture, the solution is to widen the present breachway between the two ponds.

The present breachway is 35 feet and is spanned by a bridge. The breachway should be about 80 feet, which, of course, would require a new bridge.

Ask Reopening of Sakonnet

Reopening of a Sakonnet River shellfishing area south of the old Stone Bridge has been requested by the Rhode Island Fishermen's Assoc. in Tiverton. The group, primarily shellfishermen, is seeking this action to offset the new quahauging area off Prudence Island, which they claim is now fished out.

The Sakonnet River area was closed by the State last year so it could be replenished.

Delaware Wants More Seed Oysters Planted

The Delaware Commission of Shell Fisheries has called for plans to rehabilitate the natural oyster beds of Delaware Bay, which it says have not caught a growth of seed oysters in several years.

The Commission's annual report recommends State and Federal financial aid for the purchase of seed oysters from other localities. Use of seed oysters from other States has worked in leased areas of Delaware Bay, and the report predicts a boom for the oyster industry if this plan is applied to the natural beds.

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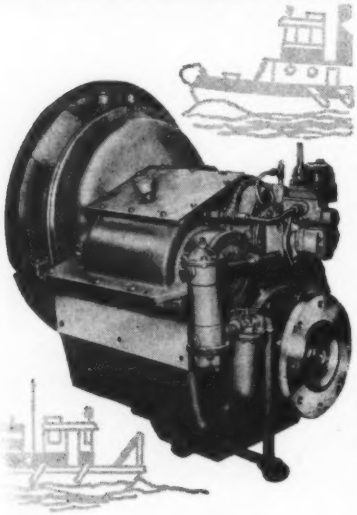

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Massachusetts Committee Plans For Fisheries Revitalization

All segments of the Massachusetts fishing industry met at the Essex Hotel in Boston last month to consider ways and means to revitalize their industry. The sense of the meeting indicated strongly that in view of the President's action in denying tariff relief, the New England fisheries must now seek other solutions to their problems.

To this end, James S. Carlson, President of the Massachusetts Fisheries Association, requested the Fish and Wildlife Service to supply full information on methods used by American agriculture to solve their problems and measures taken by foreign countries to sustain their fishing industries. A. W. Anderson, Chief of the Branch of Commercial Fisheries, submitted a report on the subject.

Representatives of boat owners, producers, processors, organized labor (both fishermen and shore workers), participated in the meeting. A resolution was unanimously passed providing that a committee representative of each port and of each interest be named, with Mr. Carlson serving as Chairman. This group will develop a new program for the fisheries, seeking relief through legislation or in other ways.

Meeting at Gloucester

The newly organized New England Committee for Aid to the Groundfish Industry met in Gloucester last month to discuss remedial proposals for the entire industry to be submitted to the Federal Government.

The committee plans to have five representatives from each major port in Massachusetts—Gloucester, Boston and New Bedford. Its purpose is to consider the development of a Federal aid program, including recommended legislation, to supplement the industry's own efforts.

Attorney Solomon Sandler, City Councillor Manuel F. Lewis and John DelTorchio of the Gloucester Fisheries Assoc. are the three Gloucester representatives on the steering committee. They will confer with their respective organizations to select two more men to represent Gloucester on the main committee.

Representing Boston are: John Doneghan of the Seafood Workers' Union; Tom Fulham of the Boston Fish Pier Corp.; Irving Usen of the Usen Trawling Co.; James Fitzgerald, processor; and Herman Trilling, boat owner and processor.

John F. Linehan, manager of the New Bedford Seafood Producers Assoc., and Joseph V. Sylvia, business agent of the Seafood Workers Union, have been named to the New Bedford steering committee, and will select men to serve on the main committee.

Small Mesh Study Vessels

The selection of small mesh study vessels in the haddock fishery in Subarea 5 for the period January 1-June 30 was announced by the Fish & Wildlife Service's Woods Hole laboratory. The boats will be: *Patty Jean, Weymouth, Michigan* and *Bonnie Breaker.*

Fulham Controls Market Corp.

Thomas Anthony Fulham, Chairman of the Board, recently announced that the Fulham Brothers interests have acquired control of the Boston Fish Market Corporation, and related properties.

Mr. Fulham also announced establishment of the 4-Fishermen Division of Fulham Brothers, Inc., which will be responsible for all the fishing, fish packing, and marketing functions formerly managed by Fulham Brothers, Inc. The new division will have complete cognizance of plants, offices, and personnel, both in the United States and Canada.

Gaylord E. Lewis, formerly Vice President and General Manager of Fulham Brothers of California, has been elected President of the 4-Fishermen Division. Named Vice President for Sales and Advertising was James E. McDonald, formerly National Sales Manager. John G. Stoddard, formerly Production Manager, has been elected Vice President in Charge of Production. The general offices of the 4-Fishermen Divisions will be at 280 Northern Avenue in Boston.

Thomas A. Fulham, Gerard A. Fulham, John N. Fulham, Jr., and Thomas M. Maloney have been re-elected to the Board of Directors of Fulham Brothers, Inc.

Aiding in Herring Study

The research vessel *Delaware* was scheduled to leave East Boston on January 25 to conduct a two-week offshore plankton survey in cooperation with the Fish & Wildlife Service's Atlantic herring investigation.

Objective of the survey is to measure the abundance and distribution of herring eggs and larvae in the Gulf of Maine and Georges Bank areas during the present spawning period. Also the temperature, salinity and the general circulation pattern of water in the Gulf of Maine and Georges Bank areas will be investigated.

The *Delaware's* cruise will enable the Atlantic herring investigation to more thoroughly cover the offshore area during the herring spawning period.

Louisiana Fishermen Ask for Separate Commercial Division

The Jefferson Parish Fishermen's Assoc., whose membership includes commercial fishermen from most of Southeastern Louisiana, has requested Gov. Long to reorganize the Commercial Fisheries Division of the Department of Wildlife. The request, in the form of a resolution adopted at the fishermen's annual meeting in Westwego, would have the Governor separate the Commercial Division from other divisions in the Department.

The fishermen also urged the Department to continue its program of advertising Louisiana seafood throughout the United States; and it called upon all fishermen of Louisiana to cooperate with the Wildlife Dept. and work together for the betterment of the industry.

The fishermen agreed to request the proper authority to have pilings driven near the banks at South Pass in the mouth of the river, to create a safe harbor so that fishermen may have a place to tie up their vessels.

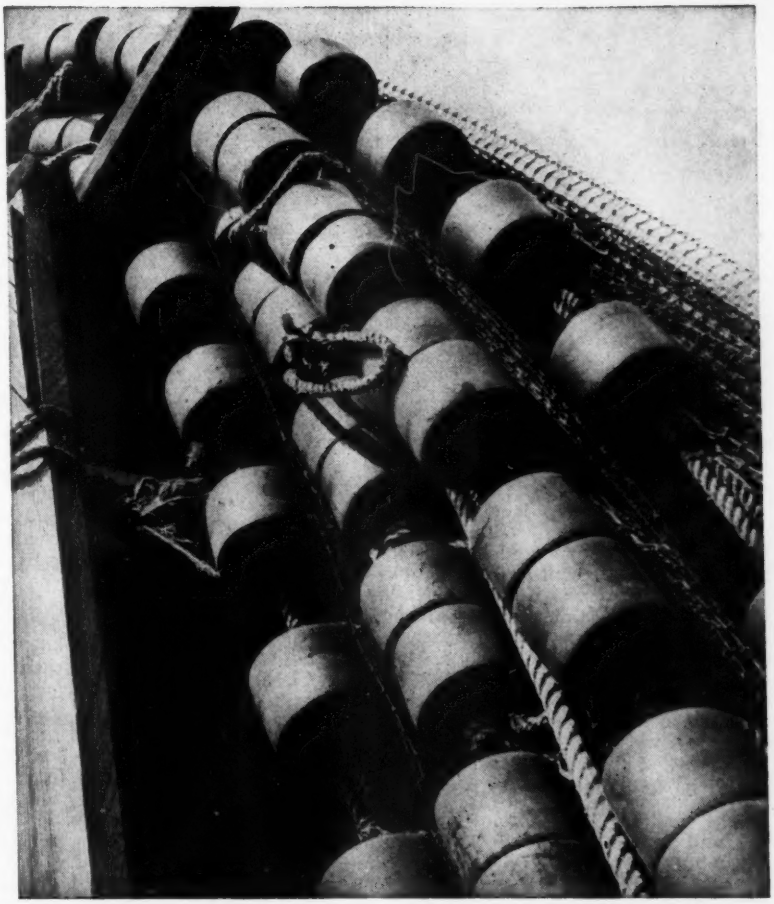
Antoine Alario of Westwego was named president of the Association for the 10th year. Other officers elected were Herman Plaisance, vice-president; Robert Clary, secretary-treasurer; William Cooper, Jr., Frances Cooper and Barbara Alario, assistant secretaries; Edward Plaisance, Joe Frickey, Onizine Hebert, Tom Alario, Jr., Joseph Guidry, Jr., Alex Plaisance, William Cooper, Sr., Ezebe Plaisance, Frank Marcombe, Surgen Dufrene, Kirby Marcombe, board of directors; and George Persohn, sergeant-at-arms.

Trawler Burns and Sinks

A trawler of the Twin City Fishermen's Cooperative Assoc. fleet, the *Miss Ramos*, owned by John Tringali of Patterson, burned and sank while anchored at the Patterson wharf last month. Cause of the fire was not known, but one crew member who was sleeping aboard the vessel reported that there was a sudden explosion.

Top Rating for Oysters

The Louisiana Shellfish Sanitation Program has been given a sanitary oyster production rating of 92.7 per cent for 1955-56 by the U. S. Public Health Service. Evaluations are made in the following categories: sanitary and bacteriological surveys of the growing areas of oyster beds; harvesting and handling of oysters; sampling and examination of oysters; plant inspection and policing of restricted and posted areas.



. . . why plastic floats?

ARK Plastic Floats were specifically developed to give commercial fishermen a better float. They outwear cork by a wide margin. They are 52% lighter than cork – and 15% more buoyant. ARK Plastic Floats do not rot and they resist damage if they are crushed between boats or run through the rollers of a net puller. Unlike cork, these floats *cannot* absorb water – that means they maintain their floatability. And just for good measure, 87 plastic floats do the job of 100 cork floats of the same size. Why don't you test them for yourself? Contact the supplier nearest you.

THE LINEN THREAD CO., INC.

418 GRAND STREET PATERSON 1, N. J.

Lombard & Calvert Sts. Baltimore 3, Md.

158 W. Hubbard St. Chicago 10, Illinois

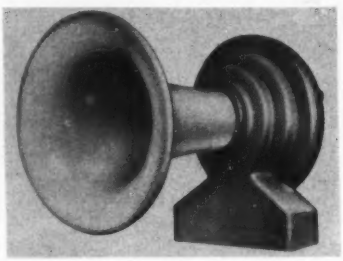
105 Maplewood Ave. Gloucester, Mass. • 116 New Montgomery St. San Francisco 5, Cal. • 140 Federal Street Boston 10, Mass. • 60 East 42nd Street New York 17, New York

MAKERS OF FINE NETTING FOR OVER A CENTURY

EQUIPMENT and SUPPLY NEWS

Buell Offers New Gas-Powered Nylon Horn

A new nylon horn, powered by freon gas in a disposable container, has been announced by Buell Manufacturing Co., Chicago, Ill. Called the Buell-ette, this low-priced horn is specifically designed for the small boat. However, it can also be used as a supplementary horn on larger craft, in case of power failure.



The Buell-ette, new nylon horn powered by freon gas.

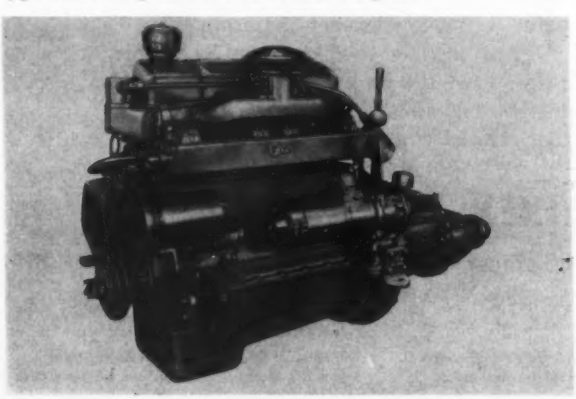
The new Buell-ette is claimed to be unaffected by weather, impervious to salt spray and highly resistant to impact. The nylon used in the horn is the same type which is fabricated into gears to make them last longer than metal. Diameter of the Buell-ette bell is 4⅝" and length is 4". The unit weighs only ounces.

The Buell-ette can be permanently mounted on deck, or attached to the can of freon gas for portable use. The disposable freon can is reported to provide pressure for several hundred one-second blasts. If permanently mounted, the Buell-ette can also be used wih a hand-operated air pump.

New 60 hp. Osco Ford Marine Diesel

Lobstermen, gill-netters and other smaller-boat fishermen will be interested in the 4DF Ford Marine Diesel recently put into production by Osco Motors Corp. This 220 cubic inch Diesel, developing 60 hp. at 2400 rpm., has been exhaustively tested over the past three years and is now going into fleet installation in Gulf and Carolina shrimpers and menhaden boats, as well as many gill-netters in the Pacific Northwest. Operating reports show Diesel fuel consumption of less than 1 gallon per hour, making the engine very economical to run.

The new Osco Ford Diesel is a compact, lightweight engine with clean design. It has 3.94 x 4.52 inch bore and stroke. The pistons are cast alloy, tin plated, and there are three compression rings and two oil control rings. The engine has replaceable wet cylinder liners, positively located. There are five replaceable copper lead main bearings. The crankshaft is forged steel, induction hardened, while the nodular alloy camshaft is gear driven. The engine has full pressure lubrication, with full flow filter. Weight ranges from 745 to 1065 pounds, depending on type of cooling and use of reduction gear.



60 hp. Osco Ford 4DF marine Diesel.

The 4DF is a 4-cylinder, 4-cycle overhead valve full Diesel, with 16:1 compression ratio. It is available in reduction gear ratios of 1.5:1, 2:1 and 3:1, as well as direct drive. On-engine heat exchangers or keel tube (Grid-cooler) heat exchangers are optional, as are power take-off, etc.

Complete specifications on the 4DF Ford Marine Diesel, together with line drawings of the engine on transparent plastic sheets in scales of ¾" to 1 foot and 1" to 1 foot, are available for laying over boat plans to match engine to hull. Write Osco Motors Corp., Philadelphia 40-AF, Penna.

New Anti-Fouling Paint "Coperit 500"

Metallic Coatings Corp., 236 West 44th St., New York 36, manufacturers of "Coperoyd" boat bottom coating, announces the development of a new product known as "Coperit 500".

The new bottom coating is composed of finely divided copper with highly fortified anti-fouling qualities suspended in suitable plastic vehicle which controls and limits the leaching of the copper, thereby extending the life of the anti-fouling properties.

It is a good red color, applies easily by brush, spray or roller and dries rapidly to a hard fast finish. No special undercoating is needed and it can be applied over any clean surface.

Thielman Heads Edo Marine Equipment Sales

Ed Thielman has been appointed Manager of Marine Equipment Sales for the Edo Corporation, College Point, N. Y. He will direct sales and service activity of the Edo line of marine electronic equipment used on naval and commercial vessels, fishing and pleasure craft. The Edo line includes radar, loran, deep depth sounders, survey depth recorders, and the Edo Fishscope, an electronic fish finding device used by commercial fishermen.

Ed Thielman

Mr. Thielman has been with Edo for 17 years, having served in both the Inspection and Engineering Departments before joining the sales staff 3 years ago. His most recent position has been that of Field Service Representative. During the course of this duty he has gone on extensive trips with commercial fishermen, and has operated far north of the Arctic Circle checking on the operation of Edo survey equipment used in conjunction with establishment of the DEW line.

American MARC-Hallett Diesel Catalog

A new catalog of small Diesels has been issued by American MARC, Inc., of 1601 West Florence Ave., Inglewood, California. Last year this company purchased the Diesel Engine Division of the Hallett Manufacturing Company, and is producing an improved line of Hallett low-horsepower, lightweight air-cooled engines.

The new 30-page catalog gives full data on the complete line of American MARC-Hallett engines; and in addition, contains much information of interest concerning small Diesels in general. Spearheading the long line of American MARC engines and power unit packages for various applications are the Models AC-1 and AC-2, 5½ and 13 bhp. air-cooled Diesels; and Models WC-1 and WC-2, the water-cooled equivalents.

Complete specifications are given on 20 basic American MARC units, including portable and stationary generating

plants; centrifugal pumping plants of various capacities; marine units, and Diesel engines for many other purposes. Also included are full installation data and profile drawings; performance curves; complete lists of available attachments and accessories; and a detailed discussion of air-cooled small Diesels, of which American MARC is reported to be the largest manufacturer in the United States.

Making of K-ting Rope Featured on TV

"The Making of K-ting Rope" was featured on a coast-to-coast telecast over more than 75 CBS-TV stations, on Sunday, January 13. The show, known as "Let's Take a Trip", features Sonny Fox who is host and guide each week to his two friends, Pud and Ginger.

In order to provide the necessary action for this production, which was done "live" rather than on film, the Cating rope plant was in full production on the Sunday of the telecast. The trip through the plant, handled in question and answer form between Sonny Fox, his two young friends, and Bill Cating, showed viewers every step in the manufacture of K-ting rope, from the blending of rope fibers to the final twisting of strands into finished rope.

Heminway & Bartlett Sales Coordinator

Harold P. Zettwoch.

W. S. Heminway, president of The Heminway & Bartlett Mfg. Co. of New York and Watertown, Connecticut, manufacturers of nylon and other synthetic threads, has announced the appointment of Harold P. Zettwoch as coordinator of sales activities.

Mr. Zettwoch has been associated with various facets of the thread business for more than 25 years. He was formerly vice-president of American & Efird Mills and prior to that, was assistant sales manager of Coats & Clark's Sales Corp.

Mr. Zettwoch is well known in the industry from having served on many intra-industry, inter-industry and industry-military Technical and Standards Committees. His headquarters will be at 500 Fifth Avenue, the New York office of Heminway & Bartlett.

Fluke Area Governs Anchor Holding Power

One of the oldest traditions of the sea and one of the most erroneous, is the idea that weight is essential to anchor holding power. It is claimed by Danforth Anchors that the true source of holding power is fluke area, as shown by the following data:

The first Danforth anchors were made of cast steel. The 55-pounder, for instance, had flukes about 31 inches long and was an amazing anchor in its time. After much research and testing, this anchor with 31-inch flukes was made of high strength steels; weighed only 40 pounds and held better. The same anchor with 31-inch flukes made of still lighter and stronger high-tensile steels weighed only 28 pounds and held still better. These constructions were used to make the Danforth lines of "Standard" and "Hi-Tensile" anchors.

More recently, special Danforth anchors have been made of high strength aluminum, titanium and other special alloys. Tests showed that the same size anchor, made of the special alloys and weighing only about 14 pounds, could out-pull its original 55-pound ancestor, dig in faster and set more quickly, because of its easy handling and sharp, thin flukes. These special 14-pound Danforths are still too costly for general use, but the progress illustrated is considerable. It is claimed that the 14-pound anchor gives more security than a 230-pound yachtsman's kedge or a 575-pound stockless.

Surrette Storage Battery Co. exhibit at New York National Motor Boat Show. On display are Surrette Types XG, XH, HHG and GTNS marine batteries; cut-a-way showing construction; and new outboard unit with battery carrier and charger. Surrette has a full range of marine batteries up to 500 ampere hour capacity.

Linen Thread Appoints Hall for N. E. Sales

The Linen Thread Company, Inc. announces the appointment of W. J. Hall as New England Sales Manager. A veteran of 42 years service, he has served in the capacity of assistant sales manager in the Company's Chicago office since 1938. His new headquarters will be in the company offices at 140 Federal Street, Boston.

Mr. Hall succeeds W. J. McHenry, manager of the Boston office, and Murdock M. MacInnis of the Gloucester office, who are retiring, and will have jurisdiction over all thread, twine, and netting sales in the New England area. Serving as Hall's assistant in charge of the Gloucester office is Frank Amero.

Mr. MacInnis completed 46 years of service, the last 16 being in the capacity of manager of the Gloucester Sales Office.

Linen Thread Company also has announced the retirement of Everett R. Jodrey who has been employed by the Company since December 1, 1953. Mr. Jodrey had previously been associated with R. J. Ederer Company since 1929.

Brochure on Bendix Electronic Equipment

Bendix-Marine has announced the availability of a new two-color all-products brochure. Called "Presenting . . . Bendix on Boats", the leaflet covers the complete line of Bendix marine equipment, including radar, automatic pilots, depth recorders, depth indicators, radio-telephones, transmitters and receivers, direction finders, portable electric generators and electric outboard motor tachometers.

Copies of the new literature may be obtained by requesting Marine Form No. 159 from the Pacific Division, Bendix Aviation Corp., 11600 Sherman Way, North Hollywood, Calif.

Graham, Universal District Representative

D. C. (Dave) Graham.

Ralph G. Klieforth, president of the Universal Motor Company, Oshkosh, Wisconsin, has announced that D. C. (Dave) Graham has joined the firm as district sales representative, to be stationed in New York City. His activities for Universal will cover the East Coast, and will embrace all of Universal's interests in this area.

Graham is a qualified marine engine man with many years' experience in the marine field on the East Coast. During the war he worked as an experimental engineer for

by every test...

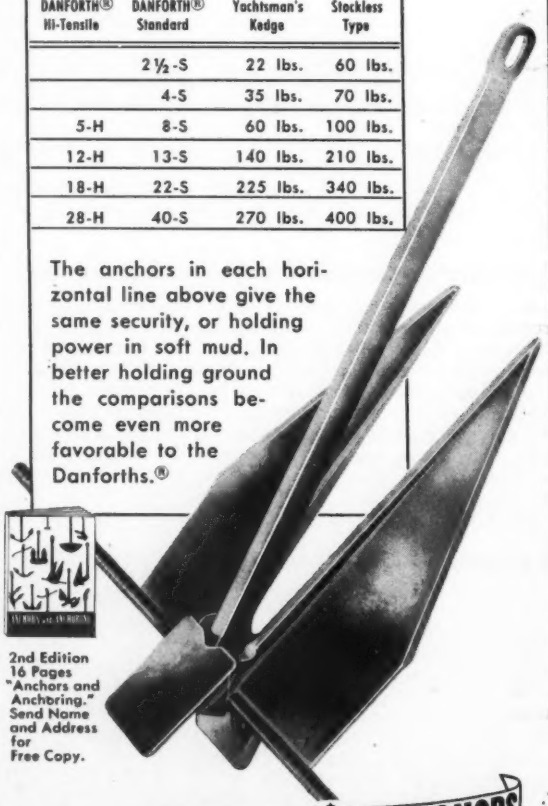
The World's Finest Anchor is a

DANFORTH®

most holding power per dollar—
most holding power per pound

DANFORTH® Hi-Tensile	DANFORTH® Standard	Yachtsman's Kedge	Stockless Type
	2½-S	22 lbs.	60 lbs.
	4-S	35 lbs.	70 lbs.
5-H	8-S	60 lbs.	100 lbs.
12-H	13-S	140 lbs.	210 lbs.
18-H	22-S	225 lbs.	340 lbs.
28-H	40-S	270 lbs.	400 lbs.

The anchors in each horizontal line above give the same security, or holding power in soft mud. In better holding ground the comparisons become even more favorable to the Danforths.®



2nd Edition 16 Pages "Anchors and Anchoring." Send Name and Address for Free Copy.

DANFORTH ANCHORS — The World's Finest

2137 Allston Way, Berkeley 4, Calif.

the Electric Boat Company, producing components for PT boats. Prior to this, he was employed by Bowler, Holmes and Hecker, New York, handling Gray, Buda and GM Diesel marine engines. For the past ten years, Graham has been a special representative for the Nordberg Manufacturing Company, working out of the New York office.

Smith Purchases Knox Marine Exchange

S. H. Smith

S. H. Smith has purchased the bulk of the stock in the Knox Marine Exchange, Inc., Camden, Maine, from Gilbert Leadbetter, the former manager. The new owner is well fitted to carry on this line of work, as he is familiar with all types of boats from skiffs to large trawlers, having lived most of his life on Cape Cod. For the past few years he has acted as a salesman in the automotive field in preparation for starting his own business.

Mr. Smith will handle a full line of marine hardware and equipment, including Columbian propellers, Nordberg gasoline engines and parts, and the Mercedes-Benz Diesel line.

Columbian Introduces Outboard Propellers

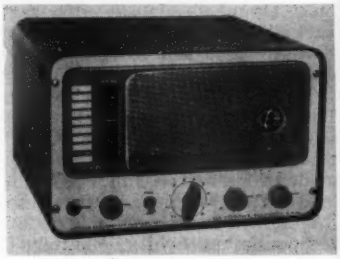
After 50 years of specializing in inboard propellers, Columbian Bronze Corp., Freeport, N. Y., is now manufacturing propellers especially designed for outboard engines.

The new customized outboard propellers are designed to take into account all three factors affecting boating efficiency, namely hull, horsepower and load. Columbian engineers state that in most cases, the original propeller can only approximate the conditions of ideal performance; and that there is need for customized propellers specifically adapted to such varied uses as cruising, high-speed operation, angling, trolling, and other types of fishing.

The new propellers are made of a high magnesium content aluminum base alloy which is heat treated for maximum resistance against corrosion and impact. They have slip clutch protection and line cutting features, and provide greater power, speed and efficiency through increased propeller "bite", with reduced vibration.

Columbian Bronze is supplying marine dealers with a Prop Selector Chart, which makes it easy to select the proper customized propeller.

New Apelco Eight-Channel Receiver



New Apelco AE-138B receiver.

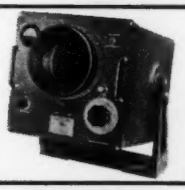
Apelco has announced the Model AE-138B, a sensitive superheterodyne receiver for the reception of amplitude modulated signals. Tunable ranges include standard broadcast, 530 to 1650 and 2000 to 6000 kcs. Eight crystal controlled channels within the 2000 to 6000 kc. range are also provided.

Sensitivity is 2 microvolts for signal-to-noise ratio of 6 db. Image rejection is better than 55 db down at 2182 kcs. Band-width is 6 db down at ± 3 kcs. from mid-band, 30 db down at ± 7 kcs. Adjustable "signal gate" for receiver quieting in the absence of signal carrier is provided.

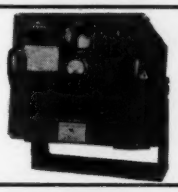
The receiver is compact, measuring 13¼" wide, 8⅜" high and 11½" deep, and has a built-in speaker. Models are available for 12 and 32V DC and 115V AC. Units can also be supplied for 6V DC and 110V DC on special order.

Superior MARINE ELECTRONIC EQUIPMENT by Edo

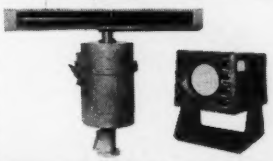
EDO FISHSCOPE Most advanced fish finding device on the market, available in three versions for deep and shallow fishing. Spots fish on CRT at depths to 400 fathoms, then magnifies any 10-fathom sector 20 to 40 times for clearer view. Compact design, single transducer.



EDO LORAN Compact, direct-reading aid to long-range navigation. No special training required to operate. Fix obtained from single, 28-tube unit in matter of seconds, regardless of weather or sea conditions. Absolutely accurate though relatively low in cost.



EDO RADAR For long and short-range navigation in any weather. CRT display gives clear picture on 1, 2, 5, 10 and 20-mile range. Patented slotted waveguide antenna, mounted on transmitter, assures superior definition. Ideal where space and generator capacity are limited.



EDO CORPORATION College Point, L.I., N.Y. SINCE 1925

How Hull Shape Affects Boat Speed

(Continued from page 12)

The large British long distance trawlers had full forebodies before the war, but after the war, due to the experience gained from model tests, they were sharpened considerably. Every modern British trawler today has a sharp forebody.

Shape of Aft Body and Stern

The angle of entrance of a ship is only one way of determining the general shape of a vessel. If a boat having a fine angle of entrance has badly shaped shoulders or aftbody, it does not necessarily have to be a low resistance boat. Similarly, a boat with very large cutaway forefoot and a comparatively large angle of entrance might have the same resistance as a smaller angle entrance boat having an angular forefoot.

The aft body also requires some consideration. It must be designed full enough to allow the engine to be placed as far aft as possible, but at the same time insuring that the propeller is sufficiently submerged and receives a good flow of water.

The shape of the stern has very significant influence on resistance. The old type of counter stern requires unnecessarily large power but some modifications of it are successful, such as the fan-tail stern used on the West Coast of the United States and in some places in Brazil, where it has been shaped so as to allow the water to leave the vessel fairly undisturbed. It gives the boat a better buoyancy aft than the cruiser stern which is now being introduced into many fishing boat types.

Another type of stern, the transom, has been used by many good fishing boats in different parts of the world for centuries. The excellent resistance characteristics of Newfoundland schooners and Pakistani bedi boats are due, to a large extent, to the adoption many years ago, of the transom stern. Model tests on transom stern resistance have clearly shown that great savings in power or increases in speed can be made with a correctly shaped transom stern.

In most instances these tests have shown that the transom stern is more profitable than the cruiser stern, especially in the loaded condition. The reason for its efficiency is that it has flow characteristics similar to a longer boat with a canoe stern. The boat thus runs at a lower speed/length ratio, which gives less specific resistance. With a transom stern the angle of the aft water lines can be made to produce less eddies.

South Carolina Shad Bill Meets with Opposition

The bill intended to soften the State law on commercial shad fishing in South Carolina ran into a snag last month in the House of Representatives. When it came up for consideration in the House, a number of members opposed immediate consideration and succeeded in side-tracking the proposed new law.

The bill would permit the use of nets with a five-inch instead of the six-inch mesh required by law, and would request the Commercial Fisheries Division to permit use of nets with the five-inch mesh for the remainder of the current season.

One of the leading defenders of the present law, Rep. P. Eugene Brabham of Bamberg, said the reduction in the size of net mesh would simply help commercial fishermen at the expense of the upstream private fishermen, and would further deplete the State's already dwindling supply of shad.

"Well pleased with performance of **NORDBERG *MARLIN*** in my 31′ Gillnetter" says Even Eide, Stanwood, Wash.

Another satisfied Nordberg owner heads out to the salmon grounds of Puget Sound . . . it's Even Eide of Stanwood, Washington, at the wheel of his new 31′ V-bottom gillnetter, *ROAMER III*. Designed by Edwin Monk and built by the Northwest Boat Shop, Everett, Washington, *ROAMER III* is powered by a 110 hp Nordberg *MARLIN*.

Mr. Eide's simple statement, "I'm well pleased with the performance of my Nordberg Marlin," speaks well for the smooth, dependable power this engine delivers even under the most rugged operating conditions. Here's steady, day after day, top-notch performance with minimum maintenance . . . the kind that adds a big plus to your fishing profits.

You want economical "take you out—bring you back" power in your fishing boat. You get it when you specify Nordberg Gasoline Marine Engines in sizes from 60 to 155 hp.

Nordberg Gasoline Marine Engines **are built in 7 heavy-duty models for fishing service, from 60 to 155 hp. 4 reduction gear ratios available, and hydraulically-operated reverse and reduction gears are optional on most models.**

UNIVERSAL MOTOR COMPANY
Nordberg® Gasoline Marine Engine Division
105 Nevada Street, Dept. NF, Oshkosh, Wisconsin

MAIL COUPON NOW!

Please send literature on Nordberg Marine Engines

Name.....

Address.....

City..... Zone..... State.....

N-982

BOAT CATCHES

For Month of January

Hailing fares. Figure after name indicates number of trips.

GLOUCESTER (Mass.)

Alden (3)	6,000	Little Flower (5)	12,700
Althea (2)	4,600	Little Joe (3)	3,500
Annie & Josie (1)	3,000		
Anthony & Josephine (5)	12,500	Mariana (1)	6,500
		Marianna II (1)	2,000
Cape Cod (7)	7,600	Maris Stella (2)	19,000
Carlannsul (5)	5,900	Mary (1)	3,000
Catherine B. (2)	12,500	Morning Star (7)	20,100
Charlotte M. (1)	11,000	Mother Ann (1)	113,000
Cigar Joe (2)	11,200		
Curlew (3)	64,200	Nancy & Maria (2)	2,200
Cushmeer (1)	90,000	Natale III (6)	26,000
		Njorth (1)	1,000
Eagle (1)	5,000	No More (1)	2,500
Eddie & Lulu M. (6)	6,500		
Etta K. (3)	2,200	Ocean Life (1)	82,000
Eva II (2)	1,000	Olympia (3)	20,000
Falcon (7)	26,300	Pioneer (2)	3,000
Florence & Lee (1)	145,000	Prosperity (5)	4,900
Flow (1)	185,000		
Frances R. (4)	18,000	Rose & Lucy (3)	15,000
Frankie & Jeanne (2)	2,000		
		St. Angelo (1)	10,000
Gaetano S. (1)	12,000	St. Anna Maria (5)	15,500
Giacoma (5)	7,400	St. Cabrini (3)	8,000
Golden Dawn (1)	1,900	St. Mary (3)	10,500
		St. Nicholas (1)	60,000
Helen B. (2)	8,500	St. Providenza (7)	8,600
Helen M. (1)	1,000	St. Rosalie (1)	30,000
Holy Family (1)	83,000	St. Stephen (5)	4,900
Holy Name (1)	2,000	Salvatore & Grace (3)	7,000
		Sebastiana C. (1)	3,000
Immaculate Conception (2)	2,000	Serafina N. (3)	11,000
Irma Virginia (6)	6,000	Serafina II (3)	9,000
		Star of the Sea (3)	11,500
Joseph & Lucia (2)	212,000	Sunlight (1)	120,000
Judith Lee Rose (1)	149,000		
		Tipsy Parson (5)	5,700
Killarney (2)	23,000		
Kurta (3)	2,000	Villanova (1)	105,000
		Virginia Ann (3)	2,900
Lady of the Rosary (5)	10,300		
Linda B. (6)	10,800	White Owl (3)	3,900

Scallop Landings (Lbs.)

Francis L. MacPherson (1)	10,000	Stephen R. (1)	2,000
Rita B. (1)	7,000		

WOODS HOLE (Mass.)

Arnold (2)	6,700	Madeline (2)	4,600
B. Estelle Burke (1)	800	Margie L. (2)	6,200
Cap'n Bill II (2)	55,000	Old Mystic (1)	700
Comber (1)	3,500	Papoose (1)	6,200
David & James (2)	6,000	Roann (4)	40,200
Gertrude D. (2)	23,200	Serafina (1)	900
Janet & Jean (1)	4,100	Three Bells (2)	9,900
Lynn (3)	6,100	Victor Johnson (1)	1,900

Scallop Landings (Lbs.)

Brant (1)	4,700	Louis Thebaud (1)	1,100
Lauren Fay (1)	11,000	Lubenray (1)	6,300

PORTLAND (Me.)

Alice M. Doughty II (6)	76,500	Kennebec (2)	19,000
Andarte (2)	50,000	Mascot (1)	800
Araho (2)	84,500	Medan (1)	100,000
Carmela & Lois (1)	1,000	Quincy (2)	50,000
Cigar Joe (2)	14,700	St. Angelo (1)	9,000
Courier (1)	3,000	St. George (1)	24,500
Dorchester (3)	205,000	St. Joseph (1)	3,700
Dorothy & Ethel II (2)	21,200	St. Rosalie (1)	24,000
Elinor & Jean (4)	28,100	Silver Bay (3)	125,000
Elinor & Joan (1)	8,000	Theresa R. (4)	225,500
Ethelina (3)	26,100	Wawenock (1)	215,000
Gulf Stream (3)	141,000	Winthrop (2)	49,000

Scallop Landings (Lbs.)

Empress (1)	11,400		

ROCKLAND (Me.)

Araho (1)	38,000	Helen Mae II (2)	8,500
Ethel B. (1)	2,000	Margaret Jean (1)	2,500

Scallop Landings (Lbs.)

Jeanne D'Arc (1)	1,700	Pocahontas (1)	11,000

STONINGTON (Conn.)

America (1)	1,300	Jane Dore (11)	8,600
Bette Ann (9)	7,600	Lt. Thos. Minor (9)	8,600
Carl J. (12)	18,700	Little Chief (9)	4,700
Carol & Dennis (1)	1,000	Luann (1)	1,200
Carolyn & Gary (7)	9,200	Marise (11)	8,500
Connie M. (10)	8,200	Theresa (1)	1,400
Fairweather (4)	9,700	Weezie May (5)	5,200
Five Sisters (5)	8,400	William B. (5)	6,900
Irene & Walter (9)	13,400		

NEW YORK

Andrea G. (2)	83,400	Joseph S. Mattos (4)	167,100
Carol-Jack (3)	118,000	Lady of Good Voyage (3)	109,500
Clipper (5)	198,600	Manuel P. Domingoes (3)	144,000
Cushmeer (1)	52,200	Miriam A. (2)	27,000
Edith L. Boudreau (3)	122,700	Richard Lance (2)	74,900
Evelina M. Goulart (2)	77,200	Star of the Sea (1)	27,500
Evelyn C. Brown (1)	27,000	Tina B. (2)	103,000
Felicia (2)	72,500	Wild Duck (3)	101,600
Golden Eagle (4)	173,700		

Scallop Landings (Lbs.)

Barbara & Gail (2)	10,900	Florence B. (1)	7,000
Beatrice & Ida (2)	10,400	Muskegon (1)	4,100
David A. (2)	13,900	Norseman (1)	10,900

NEW BEDFORD (Mass.)

Adventurer (1)	14,000	Katie D. (2)	61,500
Annie M. Jackson (4)	52,500	Kelbarsam (1)	8,700
Austin W. (2)	32,500	Lynn (1)	3,000
Barbara M. (2)	17,000	Major J. Casey (3)	39,500
Cap'n Bill II (1)	29,400	Marie & Katherine (2)	23,000
Carl Henry (3)	53,500	Mary E. D'Eon (1)	15,300
Christina J. (1)	4,500	Mary Tapper (3)	30,300
Christine & Dan (4)	46,000	Midway (2)	32,900
Comber (1)	8,500	Molly & Jane (2)	14,600
Dauntless (1)	8,000	Olive M. Williams (2)	21,000
Elva & Estelle (3)	24,500	Pauline H. (3)	70,800
Eugene & Rose (2)	22,700	Phillip & Grace (1)	30,500
Eunice-Lilian (1)	12,000	Phyllis J. (2)	10,900
Falcon (3)	37,200	Roberta Anne (2)	20,500
Falcon (New York) (2)	7,500	Rosemarie V. (3)	32,100
Famiglia (1)	14,000	Rush (3)	54,000
		R. W. Griffin, Jr. (3)	57,100
Gannet (2)	47,500		
Gladys & Mary (2)	31,500	St. Ann (2)	29,400
Growler (2)	33,200	Shannon (3)	27,500
		Stanley B. Butler (2)	68,600
Harmony (3)	39,500	Stella Maris (3)	24,600
Hope II (2)	31,500	Sunbeam (2)	28,500
Invader (3)	53,000	Teresa & Jean (2)	60,600
Jacintha (1)	25,500	Venture I (2)	37,500
Janet & Jean (2)	27,000	Victor Johnson (2)	31,000
J. H. McCloon (1)	5,500	Viking (3)	49,000
Jimmy Boy (2)	23,800		
Joan & Tom (1)	9,000	Whaler (3)	80,300
Julia DaCruz (2)	37,000		

Scallop Landings (Lbs.)

Abram H. (1)	10,000	Lauren Fay (1)	11,000
Adele K. (1)	7,000	Linus S. Eldridge (2)	17,700
Aloha (1)	11,000	Louis A. Thebaud (1)	5,200
Alpar (2)	13,800	Louise (2)	20,700
Amelia (2)	18,200	Lubenray (1)	4,500
Babe Sears (2)	18,500	Malene & Marie (1)	8,500
Baltic (2)	17,000	Marmax (2)	15,300
B. & E. (2)	7,200	Mary Anne (2)	18,500
B. Estelle Burke (1)	8,000	Mary J. Hayes (2)	19,500
Bobby & Harvey (2)	5,300	Moonlight (2)	8,400
Brant (1)	9,500		
Bright Star (2)	17,500	Nancy Jane (1)	6,500
		Nellie Pet (2)	20,000
Camden (2)	17,200	New Bedford (2)	16,800
Carol & Estelle (1)	5,500	Newfoundland (2)	17,400
Charles S. Ashley (2)	20,100	Noreen (2)	16,400
Debbie Jo-Ann (2)	19,200	Pearl Harbor (1)	2,800
Dorothy & Mary (1)	5,500	Pelican (2)	21,000
		Porpoise (2)	18,500
Edgartown (2)	22,000		
Elizabeth N. (1)	6,700	Rosalie F. (1)	3,500
Eugene H. (2)	15,300	Ruth Moses (1)	8,500
Fairhaven (2)	21,500	Sea Hawk (1)	3,000
Flamingo (2)	20,300	Sippican (3)	24,500
		Smilyn (1)	7,000
Jerry & Jimmy (1)	5,500	Stanley M. Fisher (1)	9,000
John G. Murley (2)	19,600		
Josephine & Mary (1)	5,000	Ursula M. Norton (2)	21,600
Kingfisher (1)	8,500	Vivian Fay (2)	18,800
Laura A. (1)	11,000	Wamsutta (1)	8,500

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Pacific (1)	45,000		

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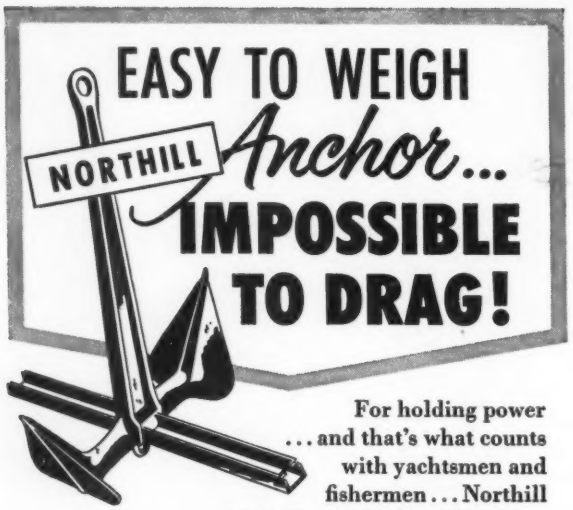

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Agatha & Patricia (3)	79,700	Mother Frances (1)	51,400
Arlington (3)	307,800		
Atlantic (2)	80,100	Nautilus (1)	38,000
		New Star (2)	184,400
Baby Rose (3)	152,500	Notre Dame (2)	59,700
Bonaventure (2)	90,900		
Bonnie (2)	173,100	Ocean Clipper (3)	83,700
Bonnie Billow (1)	46,200	Ocean Wave (5)	90,200
Brighton (2)	146,400	Ohio (2)	126,300
Buzz & Billy (1)	17,000		
		Pam Ann (3)	205,500
Cambridge (3)	244,300	Phantom (3)	254,100
Caracara (3)	84,400	Pilgrim (4)	119,700
Catherine B. (4)	35,800	Plymouth (3)	149,900
Charlotte M. (4)	150,900	Puritan (4)	111,000
Columbia (2)	96,400		
Comet (2)	120,200	Racer (2)	141,500
		Raymonde (3)	147,300
Dolphin (3)	122,100	Red Jacket (2)	222,000
Doris F. Amero (2)	52,200	Regina Maria (2)	61,800
		Roma (1)	800
Elizabeth B. (1)	75,500	Rosa B. (2)	151,700
Emily H. Brown (2)	90,700	Rosie (2)	4,300
Flying Cloud (3)	315,100	St. Angelo (1)	11,300
Four (1)	21,800	St. Anthony (2)	97,000
		St. Joseph (1)	15,900
Gaetano S. (2)	56,300	St. Nicholas (1)	84,100
Geraldine & Phyllis (2)	65,300	St. Rosalie (2)	42,800
		Sant' Antonio II (2)	11,600
Hazel B. (3)	158,900	Santa Maria (2)	39,000
Holy Family (1)	52,700	Santa Rita (1)	3,200
		Santa Rita II (2)	10,400
Jane B. (2)	147,500	Swallow (2)	116,200
J. B. Junior (1)	52,700		
Jennie & Lucia (1)	27,600	Terra Nova (2)	127,600
Josephine P. II (1)	31,100	Texas (3)	166,900
		Thomas D. (2)	83,300
Killarney (2)	33,400	Thomas Whalen (1)	32,600
Leonard & Nancy (1)	31,600	Villanova (2)	74,500
Luckimee (2)	150,100		
		Weymouth (2)	160,500
Manuel F. Roderick (3)	131,700	William J. O'Brien (2)	128,500
Mary & Joan (2)	91,900	Winchester (3)	339,600
Mary Rose (4)	178,200	Wisconsin (2)	188,500
M. C. Ballard (2)	113,900		

Harvesting Rough Fish in Winnebago

(Continued from page 13)

Soon after Christmas, all the nets are set under the ice, with most of the Winter catch going to the Chicago market at prevailing prices. When hauls are unusually heavy, a good share of the over-production is sold as mink feed at 4 to 5 cents a pound.

The Winter operations for sheepshead are not on as large a scale as in the Summer, and are never as productive as open-water netting. However, the higher prices for the fish make the operations worthwhile. Ice-hole drills running off power take-offs on jeeps, and chain saws for ice cutting, are popular tools for Winter commercial fishing in Winnebago.

Experimenting with Trawling Gear

In its sheepshead control work, the Wisconsin Conservation Department recently has been experimenting with a trawling gear similar to that used for fishing on the East Coast. Research along this line seems to indicate a bright future for trawling; it has been found that 3¾" mesh effectively catches sheepshead without entrapping any amount of game fish in the trawl bag.

The advantage of the trawling method over trap-netting, or with it, could be great. The trawling method would be cheaper, as less webbing would be used, and operations could be conducted early in the season, when winds make it impossible to operate ordinary gear.

Mr. Harris said that the rough fish experiments will continue until State biologists are satisfied that a practical way has been worked out to permit specially-licensed private individuals to trawl on a commercial scale in this large inland lake. It is expected, Mr. Harris added, that it will take 10 years to find all the answers. But in the meantime, every trapping and every trawling method, including electrical fishing, will be tried out.

Long Island Clam Cannery Moves to Delaware

The Bluepoints Seafood Corp. closed its West Sayville plant on February 1 and moved to its new location in Lewes, Del. The company is a wholly owned subsidiary of the Fred Fear Corp. of Brooklyn, and is not to be confused with the Bluepoints Co., an oyster and clam corporation which has been operating for many years.

The West Sayville installation has been canning minced clams and clam chowder from the surf clam for the past 16 years, but in the past several years has been forced to import its clams from New Jersey and Maryland. The move will enable the firm to operate close to its source of supply.

New York Fish and Shellfish Landings

Landings of fish and shellfish, exclusive of menhaden, in the Marine District of New York during October totaled 2.6 million pounds valued at $577,000. Leading species reported were scup, flounders, fish for bait, reduction and animal food, hard clam meats, surf clam meats and sea scallop meats.

At Fulton Market three otter trawlers made six trips, landing a total of 268,000 pounds of fish, practically all scup. These were the first dragger landings at the market in five months.

Twelve sea scallop vessels making 21 trips landed 130,000 lbs. of scallop meats.

Fishing Boats Locked in Ice

West Sayville's fishing and clamming boats were locked tight in ice during the week of January 14, and for the second year in succession, the bay was covered with ice from shore to shore.

Memorial Tribute to Sol Broome

A memorial tribute to the industrial and philanthropic leadership of the late Sol Broome will highlight the annual luncheon of the Fish and Seafood Division of the Federation of Jewish Philanthropies, taking place February 27th. Alex L. Rosen is chairman of the industry drive and the luncheon committee. Milton Rabinowitz and Julius Samuels are associate chairmen of the division campaign.

Georgia Waters Closed To Commercial Shrimpers

L. J. Andrews, supervisor of coastal fisheries for the State Game & Fish Commission, has announced the closing of Georgia waters to commercial shrimp fishermen, as a result of the shrimp being too small. The closing order applies to outside waters as well as inside.

A State law provides that a closed season on the taking of shrimp shall exist from January 1 to March 15 each year. However, an amendment to the act states that the commercial fishermen may continue their activity during this period if officials find that the shrimp are large enough.

Landings Mostly Shrimp and Crabs

Georgia fish and shellfish landings in October amounted to 2.5 million pounds. Shellfish production consisted mainly of shrimp—1.9 million pounds, and blue crabs—500,000 pounds.

Approximately 90 percent of Georgia shrimp landed in October were the white variety, taken mostly from waters off the southern coast of the State.

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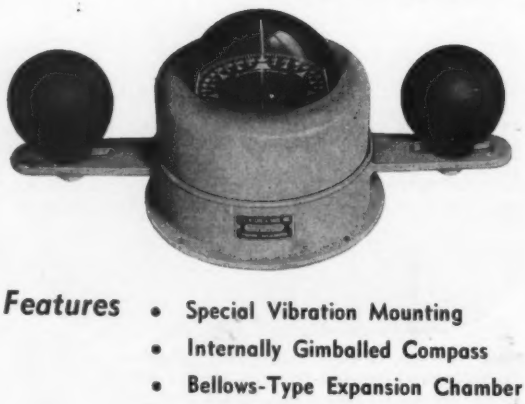

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Virginia Oyster Meat Yield Good

With the advance of the season, oyster meat yield has improved as usual. There have been reports of better yields on the whole because cooler weather in 1956 caused a decline in the oyster fungus disease. A bushel of oysters this year should shuck out more oyster meat, since fewer empty shells are showing up, according to the U. S. Fish & Wildlife Service.

The fungus disease does its worst work in warm weather, and even a two or three degree rise in temperature makes a difference, the scientists say. Dr. J. D. Andrews and Dexter Haven, specializing in oyster studies, have determined this by weather data and information on water temperatures collected at the Fisheries Laboratory.

The fungus danger was highest in 1954 because it was an unusually warm Summer. There was a 50 percent mortality in the oysters suspended on trays in the York River by the scientists for experimental purposes. Weather data collected in the Summer of 1956 showed that the temperature was cooler than since 1950, thus cutting down on the mortality of the oysters.

The scientists believe that the death of many of the oysters, blamed on the hurricanes, has been caused by warmer Summers. Before the September and October hurricanes of 1954, the Laboratory was getting reports of high oyster death rates.

The fungus disease does not attack oysters in all States, but is mostly confined to tidal areas with high salinity. The most affected areas in Virginia are in the Hampton Roads and the James River, up to the James River bridge; the York River to West Point; the Rappahannock as far as Morattico, and the mouth of the Potomac, and the Chesapeake Bay within Virginia.

"Harvest your oysters as soon as they become market size," the biologists advise. Mortalities are heaviest among the older oysters, 25 to 33 percent falling victim to the fungus.

Grant Oyster Ground Lease

The Virginia Commission of Fisheries last month assigned 500 acres of oyster ground located in Chesapeake Bay to Sam Webb of Kilmarnock.

Finfish Production Good

The finfish catch in January was good. On January 17 a total of 140,600 lbs. were hauled into Hampton Roads area ports by seven draggers. Porgy was the leading species, followed by sea bass, fluke, sea robin, bluefish and grayfish.

Crab meat production continued low last month in spite of the cold weather, which it was believed would bring an increase over the December production, when the weather was unseasonably warm.

Crab dredging in the waters near Cape Charles has not been very good since the early part of December. Although the price of crabs has been high, about $12 a barrel, the small catches make it almost impossible to meet expenses.

The after-holiday slump in oyster production that occurred in the last days of December was short-lived, and throughout January the yield in the Hampton Roads, Eastern Shore and Lower Northern Neck areas was around 10,000 to 11,000 gallons each 24-hour period.

To Engage in Shad and Herring Fishing

Only one Tangier Island pound fisherman, Capt. Wyatt Pruitt, will fish in Tangier Sound for shad and herring this Spring. Capt. Smith Parks, who has been fishing on the sound for the past 40 years, has sold his fishing rig and will devote the rest of his time to shedding crabs in Tangier Lagoon.

Capt. Pruitt and his mate Peter S. Crockett were recently sharpening poles and mending nets on the marshes,

getting ready for the Spring fishing which will start about the middle of this month.

Gets New Position at Fisheries Laboratory

Roy J. Washer has been named to the position of office supervisor at the Virginia Fisheries Laboratory. For the past two years, Mr. Washer has been a graduate research assistant to Dr. Wm. J. Hargis, Jr. of the staff engaged in oyster and oyster drill studies. He will continue this research work on his new job.

Packaging Fish in Pliofilm Bags

One of the largest fresh fish handlers on the Atlantic Coast is meeting the competition from frozen packaged fillets by pan-dressing species such as spot, scup, sea bass and gray sea trout, and packaging them in one-pound pliofilm bags. Fresh Chesapeake Bay fish are usually sold in the round, and in fluctuating volume because of factors such as uncertain supply and random sizes.

Warns of Danger to Oysters from Dyeing Plant

Dr. J. L. McHugh, director of the Virginia Fisheries Laboratory, has warned the Water Control Board at Richmond that a proposed dyeing and finishing plant on Hoskins Creek may endanger the State's multi-million dollar oyster industry.

He says that it is not known how low the oxygen content in the river can get before oyster mortality occurs, but he believes that possibly the river is carrying all the waste materials it can handle at the present time.

New Engines for "John O." of Reedville

The 136′ twin screw menhaden vessel *John O.* is being repowered with Opposed-Piston Fairbanks-Morse Diesels. The engines are Model 38F5¼, rated 600 hp. at 1200 rpm., with Snow-Nabstedt 2:1 reduction gears. Owner of the vessel is Haylow Fisheries, Inc. of Reedville, Va., which is headed by Raymond Haynie, and Capt. John Lowry is skipper. One of the engines going into the boat was exhibited by Fairbanks-Morse at the recent New York Motor Boat Show.

Hampton Roads Area Landings

Although fish landings in the Hampton Roads area during January showed a drop of over 2 million pounds from the same month last year, the catch was nearly double that of December, 1956. Landings this January totalled 2,159,800 pounds, including pound net catches of 38,700 pounds.

Over half of the January landings were scup, the catch of this variety having totalled 1,107,000 pounds, as compared to 1,403,800 pounds in the same month of last year. Next was sea bass, with 701,400 pounds, against 1,972,700 pounds in January, 1956.

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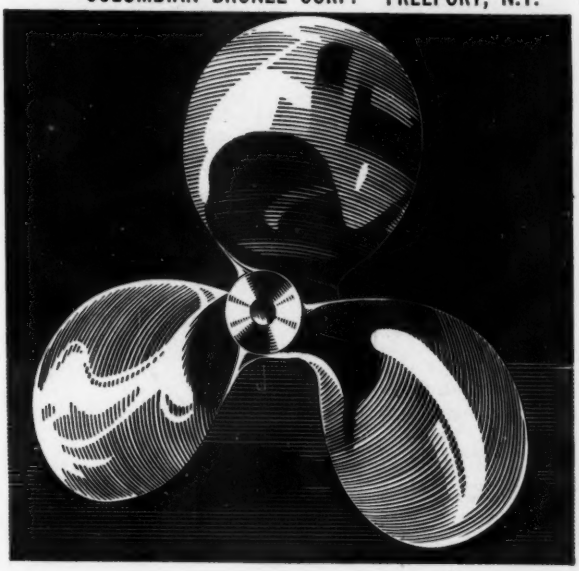

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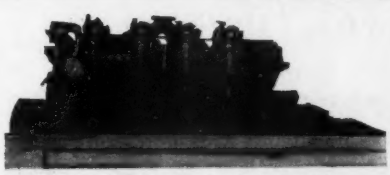

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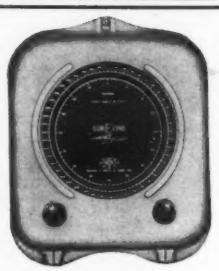

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New Bedford Ranks Third In Value of Fish Landed

The port of New Bedford was first on the East and Gulf Coasts and third place in the nation in total value of fish landings in 1956. New Bedford also retained its position as the number one scallop port in the world.

Statistics showed a total of 87,726,240 lbs. of fish and scallops landed in New Bedford during 1956, compared with 82,868,300 lbs. in 1955. The total valuation was $12,156,670, as compared with $11,995,850 the previous year.

In retaining its scallop title, there were 14,238,670 lbs. of the shellfish landed, with a valuation of $7,680,650 as compared to 13,976,000 in 1955, with a valuation of $7,308,760.

There was a substantial gain in the haddock landings during 1956, and early in 1956 there was an abundance of fluke. Yellowtail production was down. Trash fish landings increased by almost 7,000,000 lbs.

Re-elected Union's Business Agent

Victor J. Turpin of New Bedford was re-elected to a third term as secretary-treasurer and business agent of the Atlantic Fishermen's Union in a landslide victory last month. Turpin will head more than 2,000 fishermen from Portland, Me. to New York City.

John B. Patten has been re-elected to a third term as New Bedford port agent for the Atlantic Fishermen's Union. Robert Swain was named for a third consecutive term as the New Bedford port delegate.

Scallops Bring Good Price

The scalloper *Sippican* landed 2,500 lbs. of scallops on January 1 that brought a top price of 70 cents a pound—the highest price paid for the shellfish in 15 months. The trip was a costly one for the scalloper, however, for she lost a dredge and an entire spool of wire, about 300 fathoms of it, when her gear caught on the bottom and tore loose.

Vessels Lost During 1956

Eight boats of the New Bedford fleet, four scallopers and four draggers, were lost at sea during 1956. No lives were lost in the sinkings, which included the *William H. Killigrew*, *Palestine*, *Mary and Julia* and *Agda*, all scallopers, and the *Sea King*, *Rosemary*, *Hilda* and *Sister Alice*, draggers.

Scallopers Aided by Research

Research begun on the scallop industry by two New England States will be of great benefit, particularly in New Bedford, where 75 percent of the nation's scallops are landed.

The Fish & Wildlife Service vessel *Delaware* has recently completed a cruise to Browns Bank, Jeffreys Ledge and Fippenies Ledge, exploring portions of those areas which are not being fished at present. Results of the cruise show that Browns Bank supports a sizable scallop population which is, however, below the minimum commercial size for economic production.

Maine has been carrying on a scallop investigation including a study of growth rates and spawning habits, resulting in three reports giving the migration of the deep-sea scallop, the meat yield of Maine scallops and observations on the early life history of the giant scallop.

Little work has been done in the study of scallop predators, and this program is to be continued in the present investigation.

Join New Bedford Fleet

New boats joining the New Bedford fishing fleet last year included the scallopers *Sippican* and *Stanley M.*

Fisher and the trash boat *Theresa R.* Other additions to the fleet were the *Rosalie F.*, *Catherine C.* and the *Clipper*, by recent purchases, and the *Flamingo* and the *Olive M. Williams*, which returned to the fleet during the year. The *Flamingo* had been nearly destroyed by fire, and the *Williams* was a hurricane victim.

State to Dispose of "Marjorie Parker"

The State will take the next step in disposing of the hurricane-damaged schooner *Marjorie Parker*, which lies on the bottom of the Acushnet River north of the Fairhaven-New Bedford bridge. The boat was abandoned there after many attempts to salvage her had been made by her owner.

The State Division of Waterways plans to have the vessel refloated or put on a marine railway during a 10-day period in which the State will ask the owner to take custody. If the owner refuses to take custody, the State will attempt to sell or auction the vessel during the next seven days, and if there is no taker, the contractor will dispose of the *Parker*.

Scallopers Tied up by Cold

The extremely cold weather early last month tied up the Wellfleet scallop fleet in the inner basin, because of the ice which formed in the channel and across the bay from Town Wharf.

Gloucester Fisherman Gets First Boat Loan

The first money to be given out under the Federal Government's new fisheries loan program was paid January 29 to a Gloucester boat owner. The loan amounted to $10,000.

At least 10 more loan applications from the Cape Ann area have been approved and will be paid shortly, according to the Gloucester Fisheries Commission. These loans amount to $365,000, and include a $49,000 loan authorized for one of the older boats in the Gloucester fleet, indicating that the Federal Government is willing to assist older vessels that are most in need of loans.

Between 20 and 30 more local loan applications are still pending, officials said. The Government money is to be used to pay off creditors and to make improvements in the boats. Repayment of the loans is spread out in terms up to 10 years.

Five Crew-less Draggers go Roving

Five Gloucester draggers deserted a wharf and went roving last month without crews. They journeyed across the harbor from Harbor Cove and ended up aground just a few hundred yards from Rocky Neck Ave.

The five vessels making the trip were the *St. Stephen*, Capt. Nofie Demetri; *Carlansol*, Capt. Joe Randazza; *St. Peter II*, Capt. Tom Lupo; *Nancy and Marie*, Capt. Al Millifoglie and *St. Peter III*, Capt. Tom Favazza.

All five draggers were believed to have been lashed together in typical Gloucesterman fashion, and a strong breeze is believed to have caused them to part their lines.

Bloom Named Fisheries Association President

Myron L. Bloom, vice-president of O'Donnell-Usen Fisheries Corp. of Boston and manager of its Gloucester plant, has been elected president of the Gloucester Fisheries Assoc. Mr. Bloom has been associated with the O'Donnell-Usen firm for 20 years, coming to Gloucester as manager of the local plant in 1940.

Other officers elected at the Association's annual meeting to serve for the coming year, were: John DelTorchio and Harvey H. Bundy, Jr., vice-presidents; Ignatius Palumbo, treasurer; and Lawrence J. Hart, secretary.

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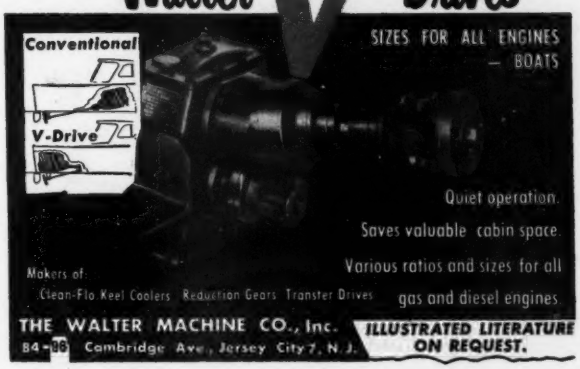
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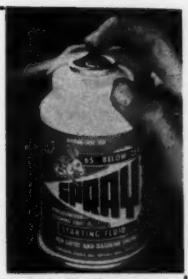

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FOREIGN BAILINGS

FISH INSPECTION PROGRAM in Canada will be further extended this Spring. Voluntary plant inspection regulations are in effect now in Newfoundland and Maritime Provinces, and it is expected that they will go into effect in British Columbia, and in inland provinces producing fresh water fish. There is also, in Newfoundland, a voluntary product inspection in effect on fresh and frozen products, and this type of inspection is to be extended as experience is gained.

NORWEGIAN-RUSSIAN TALKS began recently to determine point of demarcation of fisheries territorial waters boundary between the two countries in Varangerfjord area. The negotiations were the result of a request by Norway to the Soviet Union for a meeting to solve problems arising from seizure of more than 20 Norwegian vessels by Soviets during recent months. Norwegian vessels were allegedly fishing in Soviet territorial waters.

TUNA SPECIALTY FIRM will be established in Boston, Mass., by Japan Cold Storage Co. The subsidiary, to be called Tuna Products Corporation, will have an initial paid-up capital of $100,000 and an authorized capital of $1 million. The firm will manufacture and market various newly-developed tuna products, such as "loaf" and "sausage" and other luncheon meats.

JAPANESE SURVEY SHIP *Toku Maru* is reported to have discovered rich fishing grounds at 22° S. lat. and 18° W. long. (about 1,300 miles east of Brazil). Tuna, marlin, and other species are said to have been found in large numbers.

SOUTH AFRICA now is one of ten largest fishing nations in the world. She had a total catch of more than 570,000 metric tons in 1955.

Spiny lobster caught by South African fishermen is very good source of dollar earnings. The United States is best market for frozen spiny lobster tails.

SPANIARDS ARE BUILDING four large clipper-type tuna vessels to be used in tuna fishery off Canary and Azores Islands. It is expected that the tuna caught by these boats will be frozen and shipped to Italian canneries.

SPECIAL TAX TREATMENT is provided under "The Canadian Vessel Construction Assistance Act", which is designed to encourage building and repairs in Canadian shipyards. However, it is said that the Canadian fishing industry has not made any extensive use of this special income tax legislation as yet.

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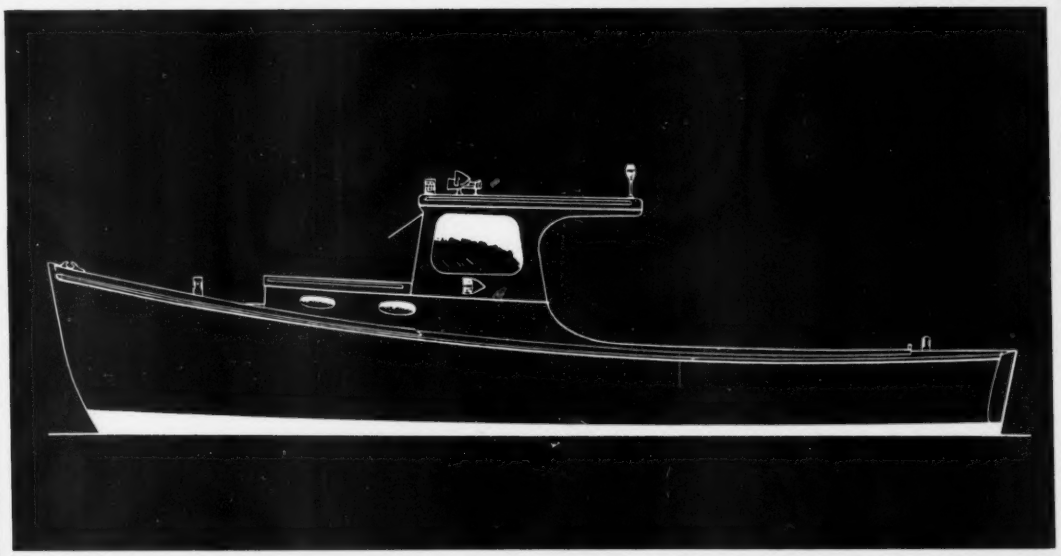
America's lobster boats brought in an estimated 28,000,000 pounds of lobster in 1955.



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World-famous fuels and lubricants—Mobilfuel Diesel, Mobilgas, Mobil Marine Oils—every Socony Mobil product has a reputation among fishermen for protecting engine performance, increasing economy and cutting down repairs and maintenance. Their continual use assures smooth, trouble-free operation, trip after trip.

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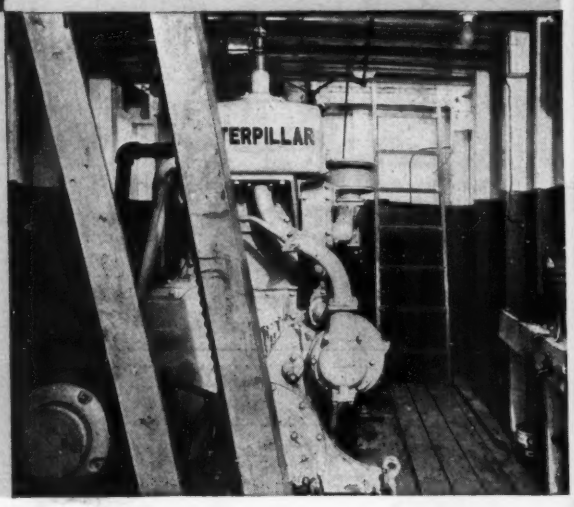
Manuel J. Versaggi, of Versaggi Shrimp Co., Tampa, Fla., and the Cat D342 Engine which powers his shrimp boat, *Voyager*.

20 years' experience with CAT* Engines and Versaggi likes them more than ever



More than 20 years ago, Versaggi Shrimp Co., of Brownsville, Texas, and Tampa, Florida, bought its *first Caterpillar Diesel.* Since then, year after year, Versaggi has continued to power shrimpers with these dependable engines. Including the *Voyager*, commissioned in late 1955, there are 35 boats in the fleet, all Caterpillar-powered.

The *Voyager* is a 67-footer, with 18½-foot beam. Her Cat D342 Engine drives a 4-blade 48″ x 36″ propeller through 3:1 reduction gear. Like other shrimpers in the Versaggi fleet, she is out 45 days or more on each trip, fishing the western Gulf of Mexico.

Manuel J. Versaggi says: "We use Caterpillar Engines because of their performance and dependability. They're designed for rugged work, and dealer service is good. Caterpillar stands behind its products. We figure in our business the best is the cheapest in the long pull."

Now replacing the "old reliable" D13000 in the Caterpillar line, the Cat D342 Engine is designed and priced to give you more for your money. More powerful, with maximum output capacity of 210 HP, the D342 takes up no more space in the hold. And you have a choice of air, electric or gasoline starting.

Your Caterpillar Dealer can supply attachments, controls and instruments, as well as a complete range of marine engines up to 650 HP (maximum output capacity). Depend on his reliable dockside service.

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